SandRidge Energy

North Park Basin
T7N-R80W-S17
Castle 0780 1-17H20

Wellbore #1
Design #1

Anticollision Report

16 December, 2015

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Design #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria	WARNING: There is hidden tight data in this project	
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 12/16/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	16,912.2	Design #1 (Wellbore #1)	Sperry MWD	Fixed:v2:standard declination

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
T7N-R80W-S17						
Castle 0780 2-17H20 - Wellbore #1 - Design #1	500.0	500.0	19.9	17.9	10.032	CC, ES
Castle 0780 2-17H20 - Wellbore #1 - Design #1	16,913.0	16,918.2	639.9	249.2	1.638	Level 4, SF
Castle 0780 3-17H20 - Wellbore #1 - Design #1	500.0	500.0	39.9	37.9	20.093	CC, ES
Castle 0780 3-17H20 - Wellbore #1 - Design #1	16,913.0	16,939.3	1,299.7	909.3	3.329	SF
Castle 0780 4-17H20 - Wellbore #1 - Design #1	500.0	500.0	60.0	58.0	30.175	CC, ES
Castle 0780 4-17H20 - Wellbore #1 - Design #1	16,913.0	17,505.5	1,959.6	1,568.9	5.016	SF
Hebron 0780 3-18H - Wellbore #1 - Design #1	3,300.0	3,298.6	146.4	132.1	10.300	CC, ES
Hebron 0780 3-18H - Wellbore #1 - Design #1	11,800.0	12,281.8	1,354.7	1,163.9	7.100	SF
Hebron 0780 4-18H - Wellbore #1 - Design #1	500.0	500.0	20.0	18.0	10.067	CC, ES
Hebron 0780 4-18H - Wellbore #1 - Design #1	4,500.0	4,498.5	45.4	26.1	2.355	SF
Hebron 0780 4-7H - Wellbore #1 - Design #1	500.0	503.0	226.3	224.3	113.707	CC
Hebron 0780 4-7H - Wellbore #1 - Design #1	3,500.0	3,500.0	236.3	221.2	15.648	ES
Hebron 0780 4-7H - Wellbore #1 - Design #1	3,900.0	3,885.8	248.9	232.2	14.862	SF
Mutual 0780 2-8H - Wellbore #1 - Design #1	500.0	500.0	151.3	149.3	76.165	CC, ES
Mutual 0780 2-8H - Wellbore #1 - Design #1	5,600.0	5,594.8	196.2	171.8	8.032	SF
Mutual 0780 3-8H - Wellbore #1 - Design #1	500.0	500.0	150.0	148.0	75.503	CC, ES
Mutual 0780 3-8H - Wellbore #1 - Design #1	3,300.0	3,284.3	231.9	217.8	16.396	SF
Mutual 0780 4-8H - Wellbore #1 - Design #1	500.0	500.0	151.3	149.4	76.169	CC, ES
Mutual 0780 4-8H - Wellbore #1 - Design #1	3,500.0	3,486.7	214.1	199.2	14.368	SF
Mutual 7-17H - Wellbore #1 - Wellbore #1	6,733.9	6,707.8	83.9	56.1	3.012	CC, ES, SF

Offset Design T7N-R80W-S17 - Castle 0780 2-17H20 - Wellbore #1 - Design #1

Survey Program: 0-Sperry MWD

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.83	-0.3	19.9	19.9				
100.0	100.0	100.0	100.0	0.1	0.1	90.83	-0.3	19.9	19.9	19.7	0.19	105.571	
200.0	200.0	200.0	200.0	0.3	0.3	90.83	-0.3	19.9	19.9	19.3	0.64	31.225	
300.0	300.0	300.0	300.0	0.5	0.5	90.83	-0.3	19.9	19.9	18.8	1.09	18.322	
400.0	400.0	400.0	400.0	0.8	0.8	90.83	-0.3	19.9	19.9	18.4	1.54	12.965	
500.0	500.0	500.0	500.0	1.0	1.0	90.83	-0.3	19.9	19.9	17.9	1.99	10.032	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	-125.11	-2.0	19.9	21.0	18.6	2.38	8.800	
673.0	672.9	672.9	672.9	1.3	1.3	-124.40	-5.2	19.9	23.1	20.4	2.66	8.688	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 2-17H20 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
700.0	699.8	699.9	699.8	1.4	1.4	-124.73	-6.4	19.9	24.1	21.3	2.76	8.715	
800.0	799.7	799.9	799.6	1.6	1.6	-125.78	-10.8	19.9	27.7	24.5	3.17	8.740	
900.0	899.5	899.8	899.5	1.8	1.8	-126.58	-15.3	19.9	31.3	27.7	3.59	8.710	
1,000.0	999.3	999.7	999.3	2.0	2.0	-127.22	-19.7	19.9	34.9	30.9	4.03	8.658	
1,100.0	1,099.1	1,099.7	1,099.1	2.3	2.2	-127.74	-24.2	19.9	38.5	34.0	4.48	8.598	
1,200.0	1,198.9	1,199.6	1,199.0	2.5	2.5	-128.34	-28.5	19.9	42.2	37.2	4.94	8.543	
1,300.0	1,298.8	1,299.4	1,298.8	2.8	2.7	-132.01	-30.3	19.9	46.0	40.6	5.37	8.558	
1,328.4	1,327.1	1,327.7	1,327.1	2.8	2.7	-133.56	-30.3	19.9	47.1	41.6	5.49	8.582	
1,400.0	1,398.6	1,399.2	1,398.6	3.0	2.9	-136.47	-30.3	19.9	49.5	43.8	5.79	8.565	
1,501.4	1,500.0	1,500.6	1,500.0	3.2	3.1	78.99	-30.3	19.9	50.9	44.7	6.13	8.294	
1,600.0	1,598.6	1,599.2	1,598.6	3.4	3.3	78.99	-30.3	19.9	50.9	44.3	6.54	7.778	
1,700.0	1,698.6	1,699.2	1,698.6	3.6	3.5	78.99	-30.3	19.9	50.9	43.9	6.95	7.314	
1,800.0	1,798.6	1,799.2	1,798.6	3.8	3.7	78.99	-30.3	19.9	50.9	43.5	7.37	6.898	
1,900.0	1,898.6	1,899.2	1,898.6	4.0	3.9	78.99	-30.3	19.9	50.9	43.1	7.80	6.525	
2,000.0	1,998.6	1,999.2	1,998.6	4.2	4.1	78.99	-30.3	19.9	50.9	42.6	8.22	6.188	
2,100.0	2,098.6	2,099.2	2,098.6	4.4	4.3	78.99	-30.3	19.9	50.9	42.2	8.65	5.882	
2,200.0	2,198.6	2,199.2	2,198.6	4.6	4.5	78.99	-30.3	19.9	50.9	41.8	9.08	5.603	
2,300.0	2,298.6	2,299.2	2,298.6	4.8	4.8	78.99	-30.3	19.9	50.9	41.4	9.51	5.349	
2,400.0	2,398.6	2,399.2	2,398.6	5.0	5.0	78.99	-30.3	19.9	50.9	40.9	9.94	5.116	
2,500.0	2,498.6	2,499.2	2,498.6	5.2	5.2	78.99	-30.3	19.9	50.9	40.5	10.38	4.902	
2,600.0	2,598.6	2,599.2	2,598.6	5.5	5.4	78.99	-30.3	19.9	50.9	40.1	10.81	4.704	
2,700.0	2,698.6	2,699.2	2,698.6	5.7	5.6	78.99	-30.3	19.9	50.9	39.6	11.25	4.522	
2,800.0	2,798.6	2,799.2	2,798.6	5.9	5.9	78.99	-30.3	19.9	50.9	39.2	11.69	4.352	
2,900.0	2,898.6	2,899.2	2,898.6	6.1	6.1	78.99	-30.3	19.9	50.9	38.7	12.13	4.195	
3,000.0	2,998.6	2,999.2	2,998.6	6.3	6.3	78.99	-30.3	19.9	50.9	38.3	12.57	4.048	
3,100.0	3,098.6	3,099.2	3,098.6	6.5	6.5	78.99	-30.3	19.9	50.9	37.9	13.01	3.911	
3,200.0	3,198.6	3,199.2	3,198.6	6.8	6.7	78.99	-30.3	19.9	50.9	37.4	13.45	3.783	
3,300.0	3,298.6	3,299.2	3,298.6	7.0	7.0	78.99	-30.3	19.9	50.9	37.0	13.89	3.663	
3,400.0	3,398.6	3,399.2	3,398.6	7.2	7.2	78.99	-30.3	19.9	50.9	36.5	14.33	3.550	
3,500.0	3,498.6	3,499.2	3,498.6	7.4	7.4	78.99	-30.3	19.9	50.9	36.1	14.77	3.444	
3,600.0	3,598.6	3,599.2	3,598.6	7.6	7.6	78.99	-30.3	19.9	50.9	35.7	15.21	3.343	
3,700.0	3,698.6	3,699.2	3,698.6	7.9	7.8	78.99	-30.3	19.9	50.9	35.2	15.66	3.249	
3,800.0	3,798.6	3,799.2	3,798.6	8.1	8.1	78.99	-30.3	19.9	50.9	34.8	16.10	3.159	
3,900.0	3,898.6	3,899.2	3,898.6	8.3	8.3	78.99	-30.3	19.9	50.9	34.3	16.54	3.075	
4,000.0	3,998.6	3,999.2	3,998.6	8.5	8.5	78.99	-30.3	19.9	50.9	33.9	16.99	2.994	
4,100.0	4,098.6	4,099.2	4,098.6	8.7	8.7	78.99	-30.3	19.9	50.9	33.4	17.43	2.918	
4,200.0	4,198.6	4,199.2	4,198.6	9.0	8.9	78.99	-30.3	19.9	50.9	33.0	17.88	2.845	
4,300.0	4,298.6	4,299.2	4,298.6	9.2	9.2	78.99	-30.3	19.9	50.9	32.5	18.32	2.776	
4,400.0	4,398.6	4,399.2	4,398.6	9.4	9.4	78.99	-30.3	19.9	50.9	32.1	18.77	2.710	
4,500.0	4,498.6	4,499.2	4,498.6	9.6	9.6	78.99	-30.3	19.9	50.9	31.7	19.21	2.648	
4,600.0	4,598.6	4,599.2	4,598.6	9.8	9.8	78.99	-30.3	19.9	50.9	31.2	19.66	2.588	
4,700.0	4,698.6	4,699.2	4,698.6	10.1	10.1	78.99	-30.3	19.9	50.9	30.8	20.10	2.530	
4,800.0	4,798.6	4,799.2	4,798.6	10.3	10.3	78.99	-30.3	19.9	50.9	30.3	20.55	2.475	
4,900.0	4,898.6	4,899.2	4,898.6	10.5	10.5	78.99	-30.3	19.9	50.9	29.9	21.00	2.423	
5,000.0	4,998.6	4,999.2	4,998.6	10.7	10.7	78.99	-30.3	19.9	50.9	29.4	21.44	2.372	
5,100.0	5,098.6	5,099.2	5,098.6	10.9	11.0	78.99	-30.3	19.9	50.9	29.0	21.89	2.324	
5,200.0	5,198.6	5,199.2	5,198.6	11.2	11.2	78.99	-30.3	19.9	50.9	28.5	22.33	2.278	
5,300.0	5,298.6	5,299.2	5,298.6	11.4	11.4	78.99	-30.3	19.9	50.9	28.1	22.78	2.233	
5,400.0	5,398.6	5,399.2	5,398.6	11.6	11.6	78.99	-30.3	19.9	50.9	27.6	23.23	2.190	
5,500.7	5,499.3	5,499.9	5,499.3	11.8	11.8	78.99	-30.3	19.9	50.9	27.2	23.68	2.148	
5,600.0	5,598.6	5,599.2	5,598.6	12.1	12.1	-175.69	-30.3	19.9	52.6	28.5	24.09	2.183	
5,700.0	5,698.4	5,699.1	5,698.4	12.3	12.3	-176.07	-30.3	19.9	57.8	33.3	24.49	2.359	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 2-17H20 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,800.0	5,798.1	5,798.7	5,798.1	12.5	12.5	-176.57	-30.3	19.9	66.4	41.6	24.87	2.672	
5,900.0	5,897.3	5,897.9	5,897.3	12.7	12.7	-177.09	-30.3	19.9	78.6	53.4	25.24	3.113	
6,000.0	5,996.1	5,996.7	5,996.1	12.9	13.0	-177.56	-30.3	19.9	94.2	68.6	25.60	3.680	
6,104.3	6,098.5	6,099.1	6,098.5	13.2	13.2	-177.97	-30.3	19.9	114.1	88.2	25.95	4.399	
6,200.0	6,192.0	6,192.6	6,192.0	13.5	13.4	-178.27	-30.3	19.9	134.1	107.8	26.35	5.090	
6,300.0	6,289.8	6,290.4	6,289.8	13.7	13.6	-178.51	-30.3	19.9	155.0	128.3	26.78	5.790	
6,400.0	6,387.6	6,388.2	6,387.6	14.0	13.8	-178.68	-30.3	19.9	176.0	148.7	27.21	6.467	
6,500.0	6,485.4	6,488.0	6,487.3	14.3	14.1	-178.49	-31.4	20.0	196.7	169.1	27.64	7.117	
6,518.7	6,503.7	6,507.3	6,506.6	14.4	14.1	-178.07	-33.0	20.2	200.4	172.7	27.72	7.230	
6,550.0	6,534.2	6,539.5	6,538.5	14.5	14.2	-164.63	-37.0	20.5	206.7	178.9	27.79	7.436	
6,600.0	6,582.4	6,590.5	6,588.5	14.6	14.2	-148.68	-47.0	21.4	217.5	189.5	27.92	7.788	
6,650.0	6,629.7	6,641.0	6,637.0	14.8	14.3	-137.63	-61.2	22.6	229.1	201.0	28.09	8.156	
6,700.0	6,675.7	6,691.1	6,683.6	15.0	14.4	-129.56	-79.4	24.2	241.5	213.2	28.31	8.533	
6,750.0	6,720.0	6,740.8	6,728.0	15.2	14.6	-123.32	-101.4	26.2	254.6	226.0	28.58	8.908	
6,800.0	6,762.3	6,790.1	6,770.1	15.4	14.7	-118.25	-127.0	28.4	268.3	239.3	28.93	9.274	
6,850.0	6,802.3	6,839.1	6,809.6	15.6	14.9	-113.98	-155.8	30.9	282.3	253.0	29.35	9.621	
6,900.0	6,839.6	6,887.8	6,846.3	15.9	15.0	-110.31	-187.8	33.7	296.7	266.9	29.84	9.943	
6,950.0	6,874.0	6,936.3	6,879.9	16.2	15.3	-107.08	-222.6	36.8	311.3	280.9	30.42	10.235	
7,000.0	6,905.3	6,984.7	6,910.4	16.5	15.5	-104.22	-259.9	40.0	326.0	294.9	31.07	10.491	
7,050.0	6,933.1	7,033.0	6,937.6	16.9	15.8	-101.66	-299.7	43.5	340.6	308.8	31.80	10.710	
7,064.4	6,940.5	7,046.9	6,944.9	17.0	15.9	-100.98	-311.6	44.5	344.8	312.8	32.02	10.767	
7,100.0	6,958.3	7,081.0	6,961.9	17.3	16.2	-100.80	-340.9	47.1	355.1	322.6	32.55	10.911	
7,200.0	7,008.3	7,176.6	7,009.7	18.1	16.9	-100.36	-423.4	54.3	384.2	350.0	34.18	11.238	
7,214.4	7,015.5	7,190.4	7,016.6	18.3	17.1	-100.30	-435.4	55.4	388.3	353.9	34.43	11.279	
7,250.0	7,032.4	7,227.7	7,034.8	18.6	17.4	-98.40	-467.8	58.1	398.3	363.1	35.15	11.331	
7,300.0	7,053.2	7,283.0	7,057.9	19.1	17.9	-96.11	-517.9	61.6	410.5	374.3	36.23	11.331	
7,350.0	7,070.3	7,338.9	7,076.3	19.7	18.5	-94.20	-570.6	64.4	420.5	383.2	37.37	11.254	
7,400.0	7,083.6	7,395.3	7,089.6	20.2	19.2	-92.62	-625.3	66.4	428.3	389.8	38.56	11.108	
7,450.0	7,093.0	7,451.9	7,097.6	20.8	19.9	-91.35	-681.3	67.6	433.8	394.0	39.80	10.899	
7,500.0	7,098.5	7,508.0	7,100.0	21.4	20.6	-90.36	-737.4	68.0	436.8	395.8	41.05	10.640	
7,543.0	7,100.0	7,551.0	7,100.0	22.0	21.1	-90.01	-780.4	68.0	437.8	395.8	42.09	10.403	
7,600.0	7,100.0	7,608.0	7,100.0	22.7	21.9	-90.01	-837.4	68.0	438.4	394.8	43.62	10.051	
7,700.0	7,100.0	7,708.0	7,100.0	24.0	23.3	-90.01	-937.3	68.0	439.3	392.9	46.43	9.462	
7,800.0	7,100.0	7,808.0	7,100.0	25.4	24.8	-90.01	-1,037.3	68.0	440.2	390.9	49.38	8.915	
7,900.0	7,100.0	7,908.0	7,100.0	26.9	26.4	-90.01	-1,137.3	68.0	441.2	388.7	52.45	8.411	
8,000.0	7,100.0	8,008.0	7,100.0	28.4	28.0	-90.01	-1,237.3	68.0	442.1	386.5	55.62	7.948	
8,100.0	7,100.0	8,108.0	7,100.0	30.0	29.6	-90.01	-1,337.3	68.0	443.0	384.1	58.87	7.525	
8,200.0	7,100.0	8,208.0	7,100.0	31.6	31.3	-90.01	-1,437.3	68.0	443.9	381.8	62.19	7.138	
8,300.0	7,100.0	8,308.0	7,100.0	33.2	33.0	-90.01	-1,537.3	68.0	444.9	379.3	65.57	6.784	
8,400.0	7,100.0	8,408.0	7,100.0	34.9	34.7	-90.01	-1,637.3	68.0	445.8	376.8	69.00	6.461	
8,500.0	7,100.0	8,508.0	7,100.0	36.6	36.5	-90.01	-1,737.3	68.0	446.7	374.3	72.48	6.164	
8,600.0	7,100.0	8,607.9	7,100.0	38.3	38.2	-90.01	-1,837.3	68.0	447.7	371.7	75.99	5.891	
8,700.0	7,100.0	8,707.9	7,100.0	40.1	40.0	-90.01	-1,937.3	68.0	448.6	369.1	79.53	5.641	
8,800.0	7,100.0	8,807.9	7,100.0	41.8	41.8	-90.01	-2,037.3	68.0	449.5	366.4	83.10	5.409	
8,900.0	7,100.0	8,907.9	7,100.0	43.6	43.6	-90.01	-2,137.3	68.0	450.4	363.7	86.69	5.196	
9,000.0	7,100.0	9,007.9	7,100.0	45.4	45.4	-90.01	-2,237.3	68.0	451.4	361.1	90.31	4.998	
9,100.0	7,100.0	9,107.9	7,100.0	47.2	47.3	-90.01	-2,337.3	68.1	452.3	358.4	93.95	4.814	
9,200.0	7,100.0	9,207.9	7,100.0	49.0	49.1	-90.01	-2,437.3	68.1	453.2	355.6	97.60	4.644	
9,300.0	7,100.0	9,307.9	7,100.0	50.8	50.9	-90.01	-2,537.3	68.1	454.2	352.9	101.27	4.485	
9,400.0	7,100.0	9,407.9	7,100.0	52.6	52.8	-90.01	-2,637.3	68.1	455.1	350.1	104.95	4.336	
9,500.0	7,100.0	9,507.9	7,100.0	54.4	54.6	-90.01	-2,737.3	68.1	456.0	347.4	108.65	4.197	
9,600.0	7,100.0	9,607.9	7,100.0	56.3	56.5	-90.01	-2,837.3	68.1	456.9	344.6	112.35	4.067	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 2-17H20 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,700.0	7,100.0	9,707.9	7,100.0	58.1	58.3	-90.01	-2,937.3	68.1	457.9	341.8	116.07	3.945	
9,800.0	7,100.0	9,807.9	7,100.0	59.9	60.2	-90.01	-3,037.3	68.1	458.8	339.0	119.79	3.830	
9,900.0	7,100.0	9,907.9	7,100.0	61.8	62.1	-90.01	-3,137.3	68.1	459.7	336.2	123.52	3.722	
10,000.0	7,100.0	10,007.9	7,100.0	63.7	64.0	-90.01	-3,237.2	68.1	460.7	333.4	127.26	3.620	
10,100.0	7,100.0	10,107.9	7,100.0	65.5	65.8	-90.01	-3,337.2	68.1	461.6	330.6	131.01	3.523	
10,200.0	7,100.0	10,207.9	7,100.0	67.4	67.7	-90.01	-3,437.2	68.1	462.5	327.7	134.76	3.432	
10,300.0	7,100.0	10,307.9	7,100.0	69.2	69.6	-90.01	-3,537.2	68.1	463.4	324.9	138.52	3.346	
10,400.0	7,100.0	10,407.9	7,100.0	71.1	71.5	-90.01	-3,637.2	68.1	464.4	322.1	142.29	3.264	
10,500.0	7,100.0	10,507.9	7,100.0	73.0	73.4	-90.01	-3,737.2	68.1	465.3	319.2	146.06	3.186	
10,600.0	7,100.0	10,607.9	7,100.0	74.9	75.3	-90.01	-3,837.2	68.1	466.2	316.4	149.83	3.112	
10,700.0	7,100.0	10,707.9	7,100.0	76.7	77.2	-90.01	-3,937.2	68.1	467.1	313.5	153.61	3.041	
10,800.0	7,100.0	10,807.9	7,100.0	78.6	79.0	-90.01	-4,037.2	68.1	468.1	310.7	157.39	2.974	
10,900.0	7,100.0	10,907.8	7,100.0	80.5	80.9	-90.01	-4,137.2	68.1	469.0	307.8	161.18	2.910	
11,000.0	7,100.0	11,007.8	7,100.0	82.4	82.8	-90.01	-4,237.2	68.2	469.9	305.0	164.97	2.849	
11,100.0	7,100.0	11,107.8	7,100.0	84.3	84.7	-90.01	-4,337.2	68.2	470.9	302.1	168.76	2.790	
11,200.0	7,100.0	11,207.8	7,100.0	86.2	86.6	-90.01	-4,437.2	68.2	471.8	299.2	172.55	2.734	
11,300.0	7,100.0	11,307.8	7,100.0	88.1	88.5	-90.01	-4,537.2	68.2	472.7	296.4	176.35	2.681	
11,400.0	7,100.0	11,407.8	7,100.0	90.0	90.4	-90.01	-4,637.2	68.2	473.6	293.5	180.15	2.629	
11,500.0	7,100.0	11,507.8	7,100.0	91.8	92.3	-90.01	-4,737.2	68.2	474.6	290.6	183.95	2.580	
11,600.0	7,100.0	11,607.8	7,100.0	93.7	94.3	-90.01	-4,837.2	68.2	475.5	287.7	187.76	2.533	
11,700.0	7,100.0	11,707.8	7,100.0	95.6	96.2	-90.01	-4,937.2	68.2	476.4	284.9	191.57	2.487	
11,800.0	7,100.0	11,807.8	7,100.0	97.5	98.1	-90.01	-5,037.2	68.2	477.4	282.0	195.38	2.443	
11,892.4	7,100.0	11,900.2	7,100.0	99.3	99.8	-90.01	-5,129.5	68.2	478.2	279.3	198.90	2.404	
11,900.0	7,100.0	11,907.8	7,100.0	99.4	100.0	-90.01	-5,137.2	68.2	478.3	279.1	199.19	2.401	
11,958.5	7,100.0	11,966.3	7,100.0	100.4	101.1	-90.01	-5,195.6	68.2	479.6	278.3	201.31	2.382	
12,000.0	7,100.0	12,007.8	7,100.0	101.1	101.9	-90.01	-5,237.1	68.2	480.9	278.1	202.84	2.371	
12,100.0	7,100.0	12,107.7	7,100.0	103.0	103.8	-90.01	-5,337.1	68.2	484.2	277.5	206.65	2.343	
12,200.0	7,100.0	12,207.7	7,100.0	104.9	105.7	-90.01	-5,437.0	68.2	487.4	277.0	210.46	2.316	
12,300.0	7,100.0	12,307.6	7,100.0	106.8	107.6	-90.01	-5,537.0	68.2	490.6	276.4	214.26	2.290	
12,400.0	7,100.0	12,407.6	7,100.0	108.7	109.5	-90.01	-5,636.9	68.2	493.9	275.8	218.07	2.265	
12,500.0	7,100.0	12,507.5	7,100.0	110.6	111.4	-90.01	-5,736.9	68.2	497.1	275.2	221.88	2.240	
12,600.0	7,100.0	12,607.5	7,100.0	112.5	113.3	-90.01	-5,836.8	68.2	500.3	274.6	225.70	2.217	
12,700.0	7,100.0	12,707.4	7,100.0	114.4	115.3	-90.01	-5,936.8	68.2	503.6	274.1	229.51	2.194	
12,800.0	7,100.0	12,807.4	7,100.0	116.3	117.2	-90.01	-6,036.7	68.2	506.8	273.5	233.32	2.172	
12,900.0	7,100.0	12,907.3	7,100.0	118.2	119.1	-90.01	-6,136.7	68.3	510.0	272.9	237.14	2.151	
13,000.0	7,100.0	13,007.2	7,100.0	120.1	121.0	-90.01	-6,236.6	68.3	513.3	272.3	240.95	2.130	
13,100.0	7,100.0	13,107.2	7,100.0	122.0	122.9	-90.01	-6,336.6	68.3	516.5	271.7	244.77	2.110	
13,200.0	7,100.0	13,207.1	7,100.0	123.9	124.8	-90.01	-6,436.5	68.3	519.8	271.2	248.59	2.091	
13,300.0	7,100.0	13,307.1	7,100.0	125.8	126.7	-90.01	-6,536.4	68.3	523.0	270.6	252.41	2.072	
13,400.0	7,100.0	13,407.0	7,100.0	127.7	128.7	-90.01	-6,636.4	68.3	526.2	270.0	256.23	2.054	
13,500.0	7,100.0	13,507.0	7,100.0	129.6	130.6	-90.01	-6,736.3	68.3	529.5	269.4	260.05	2.036	
13,600.0	7,100.0	13,606.9	7,100.0	131.5	132.5	-90.01	-6,836.3	68.3	532.7	268.8	263.87	2.019	
13,700.0	7,100.0	13,706.9	7,100.0	133.4	134.4	-90.01	-6,936.2	68.3	535.9	268.2	267.69	2.002	
13,800.0	7,100.0	13,806.8	7,100.0	135.4	136.3	-90.01	-7,036.2	68.3	539.2	267.6	271.52	1.986	Level 4
13,900.0	7,100.0	13,906.8	7,100.0	137.3	138.3	-90.01	-7,136.1	68.3	542.4	267.1	275.34	1.970	Level 4
14,000.0	7,100.0	14,006.7	7,100.0	139.2	140.2	-90.01	-7,236.1	68.3	545.6	266.5	279.17	1.955	Level 4
14,100.0	7,100.0	14,106.7	7,100.0	141.1	142.1	-90.01	-7,336.0	68.3	548.9	265.9	282.99	1.940	Level 4
14,200.0	7,100.0	14,206.6	7,100.0	143.0	144.0	-90.01	-7,436.0	68.3	552.1	265.3	286.82	1.925	Level 4
14,300.0	7,100.0	14,306.6	7,100.0	144.9	145.9	-90.01	-7,535.9	68.3	555.3	264.7	290.64	1.911	Level 4
14,400.0	7,100.0	14,406.5	7,100.0	146.8	147.8	-90.01	-7,635.9	68.3	558.6	264.1	294.47	1.897	Level 4
14,500.0	7,100.0	14,506.5	7,100.0	148.7	149.8	-90.01	-7,735.8	68.3	561.8	263.5	298.30	1.883	Level 4
14,600.0	7,100.0	14,606.4	7,100.0	150.6	151.7	-90.01	-7,835.8	68.3	565.0	262.9	302.13	1.870	Level 4

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 2-17H20 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,700.0	7,100.0	14,706.4	7,100.0	152.5	153.6	-90.01	-7,935.7	68.3	568.3	262.3	305.95	1.857	Level 4
14,800.0	7,100.0	14,806.3	7,100.0	154.4	155.5	-90.01	-8,035.7	68.3	571.5	261.7	309.78	1.845	Level 4
14,900.0	7,100.0	14,906.3	7,100.0	156.3	157.5	-90.01	-8,135.6	68.4	574.7	261.1	313.61	1.833	Level 4
15,000.0	7,100.0	15,006.2	7,100.0	158.2	159.4	-90.01	-8,235.6	68.4	578.0	260.5	317.44	1.821	Level 4
15,100.0	7,100.0	15,106.1	7,100.0	160.1	161.3	-90.01	-8,335.5	68.4	581.2	259.9	321.27	1.809	Level 4
15,200.0	7,100.0	15,206.1	7,100.0	162.1	163.2	-90.01	-8,435.5	68.4	584.4	259.3	325.10	1.798	Level 4
15,300.0	7,100.0	15,306.0	7,100.0	164.0	165.1	-90.01	-8,535.4	68.4	587.7	258.8	328.93	1.787	Level 4
15,400.0	7,100.0	15,406.0	7,100.0	165.9	167.1	-90.01	-8,635.3	68.4	590.9	258.2	332.76	1.776	Level 4
15,500.0	7,100.0	15,505.9	7,100.0	167.8	169.0	-90.01	-8,735.3	68.4	594.2	257.6	336.60	1.765	Level 4
15,600.0	7,100.0	15,605.9	7,100.0	169.7	170.9	-90.01	-8,835.2	68.4	597.4	257.0	340.43	1.755	Level 4
15,700.0	7,100.0	15,705.8	7,100.0	171.6	172.8	-90.01	-8,935.2	68.4	600.6	256.4	344.26	1.745	Level 4
15,800.0	7,100.0	15,805.8	7,100.0	173.5	174.7	-90.01	-9,035.1	68.4	603.9	255.8	348.09	1.735	Level 4
15,900.0	7,100.0	15,905.7	7,100.0	175.4	176.7	-90.01	-9,135.1	68.4	607.1	255.2	351.93	1.725	Level 4
16,000.0	7,100.0	16,005.7	7,100.0	177.3	178.6	-90.01	-9,235.0	68.4	610.3	254.6	355.76	1.716	Level 4
16,100.0	7,100.0	16,105.6	7,100.0	179.2	180.5	-90.01	-9,335.0	68.4	613.6	254.0	359.59	1.706	Level 4
16,200.0	7,100.0	16,205.6	7,100.0	181.2	182.4	-90.01	-9,434.9	68.4	616.8	253.4	363.43	1.697	Level 4
16,300.0	7,100.0	16,305.5	7,100.0	183.1	184.4	-90.01	-9,534.9	68.4	620.0	252.8	367.26	1.688	Level 4
16,400.0	7,100.0	16,405.5	7,100.0	185.0	186.3	-90.01	-9,634.8	68.4	623.3	252.2	371.10	1.680	Level 4
16,500.0	7,100.0	16,505.4	7,100.0	186.9	188.2	-90.01	-9,734.8	68.4	626.5	251.6	374.93	1.671	Level 4
16,600.0	7,100.0	16,605.4	7,100.0	188.8	190.1	-90.01	-9,834.7	68.4	629.7	251.0	378.77	1.663	Level 4
16,700.0	7,100.0	16,705.3	7,100.0	190.7	192.1	-90.01	-9,934.7	68.4	633.0	250.4	382.60	1.654	Level 4
16,800.0	7,100.0	16,805.3	7,100.0	192.6	194.0	-90.01	-10,034.6	68.5	636.2	249.8	386.44	1.646	Level 4
16,900.0	7,100.0	16,905.2	7,100.0	194.5	195.9	-90.01	-10,134.6	68.5	639.4	249.2	390.26	1.639	Level 4
16,912.3	7,100.0	16,917.5	7,100.0	194.8	196.1	-90.01	-10,146.9	68.5	639.8	249.2	390.68	1.638	Level 4
16,913.0	7,100.0	16,918.2	7,100.0	194.8	196.1	-90.01	-10,147.5	68.5	639.9	249.2	390.70	1.638	Level 4, SF

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 3-17H20 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.79	-0.5	39.9	39.9				
100.0	100.0	100.0	100.0	0.1	0.1	90.79	-0.5	39.9	39.9	39.7	0.19	211.457	
200.0	200.0	200.0	200.0	0.3	0.3	90.79	-0.5	39.9	39.9	39.3	0.64	62.544	
300.0	300.0	300.0	300.0	0.5	0.5	90.79	-0.5	39.9	39.9	38.8	1.09	36.699	
400.0	400.0	400.0	400.0	0.8	0.8	90.79	-0.5	39.9	39.9	38.4	1.54	25.968	
500.0	500.0	500.0	500.0	1.0	1.0	90.79	-0.5	39.9	39.9	37.9	1.99	20.093	CC, ES
600.0	600.0	598.7	598.7	1.2	1.2	-126.92	-1.3	41.4	42.5	40.1	2.39	17.764	
673.0	672.9	671.4	671.3	1.3	1.3	-128.74	-2.5	43.9	47.1	44.4	2.68	17.579	
700.0	699.8	698.3	698.2	1.4	1.4	-129.65	-3.0	44.8	49.0	46.2	2.78	17.598	
800.0	799.7	798.0	797.9	1.6	1.6	-132.50	-4.7	48.2	56.2	53.0	3.19	17.618	
900.0	899.5	897.7	897.5	1.8	1.8	-134.69	-6.4	51.5	63.5	59.9	3.61	17.586	
1,000.0	999.3	997.4	997.1	2.0	2.0	-136.43	-8.0	54.9	70.9	66.9	4.04	17.532	
1,100.0	1,099.1	1,097.3	1,096.9	2.3	2.3	-137.85	-9.7	58.3	78.4	73.9	4.48	17.472	
1,200.0	1,198.9	1,199.3	1,198.9	2.5	2.5	-139.89	-10.5	59.9	84.3	79.4	4.91	17.177	
1,300.0	1,298.8	1,299.1	1,298.8	2.8	2.7	-142.39	-10.5	59.9	89.0	83.7	5.34	16.680	
1,328.4	1,327.1	1,327.5	1,327.1	2.8	2.7	-143.06	-10.5	59.9	90.4	84.9	5.46	16.551	
1,400.0	1,398.6	1,399.0	1,398.6	3.0	2.9	-144.35	-10.5	59.9	93.2	87.4	5.77	16.159	
1,501.4	1,500.0	1,500.4	1,500.0	3.2	3.1	71.87	-10.5	59.9	94.6	88.4	6.21	15.245	
1,600.0	1,598.6	1,599.0	1,598.6	3.4	3.3	71.87	-10.5	59.9	94.6	88.0	6.62	14.294	
1,700.0	1,698.6	1,699.0	1,698.6	3.6	3.5	71.87	-10.5	59.9	94.6	87.6	7.04	13.443	
1,800.0	1,798.6	1,799.0	1,798.6	3.8	3.7	71.87	-10.5	59.9	94.6	87.2	7.46	12.681	
1,900.0	1,898.6	1,899.0	1,898.6	4.0	4.0	71.87	-10.5	59.9	94.6	86.7	7.89	11.996	
2,000.0	1,998.6	1,999.0	1,998.6	4.2	4.2	71.87	-10.5	59.9	94.6	86.3	8.32	11.379	
2,100.0	2,098.6	2,099.0	2,098.6	4.4	4.4	71.87	-10.5	59.9	94.6	85.9	8.75	10.819	
2,200.0	2,198.6	2,199.0	2,198.6	4.6	4.6	71.87	-10.5	59.9	94.6	85.4	9.18	10.309	
2,300.0	2,298.6	2,299.0	2,298.6	4.8	4.8	71.87	-10.5	59.9	94.6	85.0	9.61	9.844	
2,400.0	2,398.6	2,399.0	2,398.6	5.0	5.1	71.87	-10.5	59.9	94.6	84.6	10.05	9.418	
2,500.0	2,498.6	2,499.0	2,498.6	5.2	5.3	71.87	-10.5	59.9	94.6	84.1	10.48	9.026	
2,600.0	2,598.6	2,599.0	2,598.6	5.5	5.5	71.87	-10.5	59.9	94.6	83.7	10.92	8.664	
2,700.0	2,698.6	2,699.0	2,698.6	5.7	5.7	71.87	-10.5	59.9	94.6	83.3	11.36	8.330	
2,800.0	2,798.6	2,799.0	2,798.6	5.9	5.9	71.87	-10.5	59.9	94.6	82.8	11.80	8.020	
2,900.0	2,898.6	2,899.0	2,898.6	6.1	6.2	71.87	-10.5	59.9	94.6	82.4	12.24	7.731	
3,000.0	2,998.6	2,999.0	2,998.6	6.3	6.4	71.87	-10.5	59.9	94.6	81.9	12.68	7.463	
3,100.0	3,098.6	3,099.0	3,098.6	6.5	6.6	71.87	-10.5	59.9	94.6	81.5	13.12	7.212	
3,200.0	3,198.6	3,199.0	3,198.6	6.8	6.8	71.87	-10.5	59.9	94.6	81.1	13.56	6.977	
3,300.0	3,298.6	3,299.0	3,298.6	7.0	7.1	71.87	-10.5	59.9	94.6	80.6	14.00	6.756	
3,400.0	3,398.6	3,399.0	3,398.6	7.2	7.3	71.87	-10.5	59.9	94.6	80.2	14.45	6.549	
3,500.0	3,498.6	3,499.0	3,498.6	7.4	7.5	71.87	-10.5	59.9	94.6	79.7	14.89	6.354	
3,600.0	3,598.6	3,599.0	3,598.6	7.6	7.7	71.87	-10.5	59.9	94.6	79.3	15.33	6.171	
3,700.0	3,698.6	3,699.0	3,698.6	7.9	7.9	71.87	-10.5	59.9	94.6	78.8	15.78	5.997	
3,800.0	3,798.6	3,799.0	3,798.6	8.1	8.2	71.87	-10.5	59.9	94.6	78.4	16.22	5.833	
3,900.0	3,898.6	3,899.0	3,898.6	8.3	8.4	71.87	-10.5	59.9	94.6	78.0	16.67	5.677	
4,000.0	3,998.6	3,999.0	3,998.6	8.5	8.6	71.87	-10.5	59.9	94.6	77.5	17.11	5.530	
4,100.0	4,098.6	4,099.0	4,098.6	8.7	8.8	71.87	-10.5	59.9	94.6	77.1	17.56	5.390	
4,200.0	4,198.6	4,199.0	4,198.6	9.0	9.1	71.87	-10.5	59.9	94.6	76.6	18.00	5.256	
4,300.0	4,298.6	4,299.0	4,298.6	9.2	9.3	71.87	-10.5	59.9	94.6	76.2	18.45	5.129	
4,400.0	4,398.6	4,396.1	4,395.7	9.4	9.5	72.30	-10.8	61.5	96.1	77.2	18.88	5.091	
4,500.0	4,498.6	4,493.0	4,492.5	9.6	9.7	73.56	-11.6	66.3	100.6	81.3	19.30	5.214	
4,600.0	4,598.6	4,589.5	4,588.6	9.8	9.9	75.41	-12.8	74.4	108.3	88.6	19.73	5.489	
4,700.0	4,698.6	4,685.3	4,683.7	10.1	10.1	77.60	-14.6	85.5	119.2	99.0	20.16	5.910	
4,800.0	4,798.6	4,780.2	4,777.6	10.3	10.3	79.87	-16.8	99.6	133.3	112.7	20.61	6.468	
4,900.0	4,898.6	4,874.1	4,869.8	10.5	10.6	82.05	-19.5	116.5	150.7	129.7	21.07	7.154	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 3-17H20 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.6	4,966.7	4,960.3	10.7	10.8	84.04	-22.7	136.2	171.4	149.9	21.55	7.956	
5,100.0	5,098.6	5,058.0	5,048.8	10.9	11.1	85.80	-26.2	158.4	195.3	173.3	22.04	8.863	
5,200.0	5,198.6	5,147.7	5,135.0	11.2	11.4	87.33	-30.1	182.9	222.4	199.8	22.56	9.858	
5,300.0	5,298.6	5,236.5	5,219.6	11.4	11.7	88.65	-34.3	209.8	252.5	229.4	23.10	10.930	
5,400.0	5,398.6	5,331.4	5,309.5	11.6	12.1	89.80	-39.1	239.5	283.9	260.2	23.70	11.978	
5,500.7	5,499.3	5,426.8	5,400.0	11.8	12.5	90.73	-43.8	269.5	315.5	291.2	24.32	12.974	
5,600.0	5,598.6	5,520.5	5,488.8	12.1	12.9	-162.94	-48.5	298.8	348.4	324.5	23.89	14.580	
5,700.0	5,698.4	5,613.7	5,577.1	12.3	13.3	-162.33	-53.1	328.1	384.6	360.3	24.28	15.841	
5,800.0	5,798.1	5,705.6	5,664.3	12.5	13.8	-161.90	-57.7	356.9	423.9	399.2	24.65	17.198	
5,900.0	5,897.3	5,796.2	5,750.2	12.7	14.2	-161.62	-62.2	385.4	466.2	441.2	25.00	18.647	
6,000.0	5,996.1	5,885.3	5,834.7	12.9	14.7	-161.44	-66.6	413.3	511.5	486.2	25.34	20.186	
6,104.3	6,098.5	5,976.7	5,921.3	13.2	15.1	-161.34	-71.2	442.0	561.9	536.2	25.68	21.882	
6,200.0	6,192.0	6,059.6	5,999.9	13.5	15.6	-161.60	-75.3	468.0	609.5	583.5	26.08	23.371	
6,300.0	6,289.8	6,146.2	6,082.1	13.7	16.1	-161.83	-79.6	495.2	659.4	632.9	26.51	24.875	
6,400.0	6,387.6	6,232.9	6,164.3	14.0	16.5	-162.04	-84.0	522.4	709.2	682.3	26.94	26.327	
6,500.0	6,485.4	6,319.6	6,246.5	14.3	17.0	-162.21	-88.3	549.6	759.0	731.7	27.38	27.727	
6,518.7	6,503.7	6,335.8	6,261.9	14.4	17.1	-162.24	-89.1	554.7	768.4	740.9	27.46	27.984	
6,550.0	6,534.2	6,362.9	6,287.5	14.5	17.2	-148.54	-90.4	563.2	784.0	756.5	27.57	28.435	
6,600.0	6,582.4	6,405.6	6,328.1	14.6	17.5	-132.44	-92.6	576.6	809.2	781.4	27.79	29.117	
6,650.0	6,629.7	6,447.6	6,367.9	14.8	17.7	-121.52	-94.7	589.8	834.6	806.6	28.06	29.744	
6,700.0	6,675.7	6,488.4	6,406.6	15.0	18.0	-113.79	-96.7	602.6	860.1	831.7	28.37	30.320	
6,750.0	6,720.0	6,527.8	6,443.9	15.2	18.2	-108.03	-98.6	614.9	885.7	857.0	28.71	30.852	
6,800.0	6,762.3	6,565.4	6,479.5	15.4	18.4	-103.51	-100.5	626.7	911.3	882.3	29.08	31.343	
6,850.0	6,802.3	6,629.1	6,539.9	15.6	18.7	-100.79	-107.1	646.0	936.6	907.1	29.48	31.770	
6,900.0	6,839.6	6,701.5	6,607.6	15.9	19.1	-98.83	-122.9	666.0	960.7	930.8	29.91	32.117	
6,950.0	6,874.0	6,784.5	6,682.8	16.2	19.5	-97.44	-151.6	686.0	983.2	952.8	30.38	32.358	
7,000.0	6,905.3	6,880.4	6,764.4	16.5	20.0	-96.49	-198.0	704.7	1,003.5	972.5	30.93	32.442	
7,050.0	6,933.1	6,990.7	6,848.7	16.9	20.5	-95.76	-267.4	719.8	1,020.9	989.3	31.63	32.280	
7,064.4	6,940.5	7,025.3	6,872.5	17.0	20.7	-95.56	-292.3	723.0	1,025.3	993.4	31.87	32.168	
7,100.0	6,958.3	7,115.4	6,927.6	17.3	21.2	-96.23	-363.2	727.8	1,034.8	1,002.3	32.55	31.792	
7,200.0	7,008.3	7,237.6	6,989.8	18.1	21.9	-96.23	-468.5	728.3	1,056.8	1,022.6	34.20	30.904	
7,214.4	7,015.5	7,251.7	6,996.8	18.3	22.0	-96.23	-480.7	728.3	1,060.0	1,025.6	34.43	30.782	
7,250.0	7,032.4	7,286.5	7,014.2	18.6	22.2	-94.71	-510.8	728.3	1,067.4	1,032.3	35.13	30.386	
7,300.0	7,053.2	7,334.5	7,037.5	19.1	22.6	-93.06	-552.8	728.3	1,076.5	1,040.3	36.16	29.767	
7,350.0	7,070.3	7,382.5	7,057.5	19.7	23.0	-91.80	-596.3	728.3	1,084.0	1,046.8	37.30	29.067	
7,400.0	7,083.6	7,431.0	7,073.9	20.2	23.4	-90.88	-642.0	728.3	1,090.1	1,051.5	38.52	28.301	
7,450.0	7,093.0	7,479.9	7,086.5	20.8	23.9	-90.27	-689.3	728.3	1,094.4	1,054.6	39.82	27.484	
7,500.0	7,098.5	7,529.3	7,095.1	21.4	24.4	-89.97	-737.9	728.3	1,097.2	1,056.0	41.19	26.635	
7,543.0	7,100.0	7,572.1	7,099.1	22.0	24.9	-89.96	-780.4	728.3	1,098.2	1,055.8	42.41	25.892	
7,600.0	7,100.0	7,629.1	7,100.0	22.7	25.5	-90.00	-837.4	728.3	1,098.7	1,054.8	43.94	25.008	
7,700.0	7,100.0	7,729.0	7,100.0	24.0	26.7	-90.00	-937.4	728.3	1,099.7	1,052.9	46.72	23.539	
7,800.0	7,100.0	7,829.0	7,100.0	25.4	28.0	-90.00	-1,037.4	728.3	1,100.6	1,050.9	49.64	22.171	
7,900.0	7,100.0	7,929.0	7,100.0	26.9	29.4	-90.00	-1,137.4	728.3	1,101.5	1,048.8	52.69	20.907	
8,000.0	7,100.0	8,029.0	7,100.0	28.4	30.8	-90.00	-1,237.4	728.3	1,102.4	1,046.6	55.83	19.745	
8,100.0	7,100.0	8,129.0	7,100.0	30.0	32.3	-90.00	-1,337.4	728.3	1,103.3	1,044.3	59.06	18.681	
8,200.0	7,100.0	8,229.0	7,100.0	31.6	33.8	-90.00	-1,437.4	728.3	1,104.3	1,041.9	62.36	17.707	
8,300.0	7,100.0	8,329.0	7,100.0	33.2	35.4	-90.00	-1,537.3	728.3	1,105.2	1,039.5	65.73	16.815	
8,400.0	7,100.0	8,429.0	7,100.0	34.9	37.0	-90.00	-1,637.3	728.3	1,106.1	1,037.0	69.14	15.998	
8,500.0	7,100.0	8,529.0	7,100.0	36.6	38.7	-90.00	-1,737.3	728.3	1,107.0	1,034.4	72.60	15.248	
8,600.0	7,100.0	8,629.0	7,100.0	38.3	40.3	-90.00	-1,837.3	728.3	1,108.0	1,031.9	76.10	14.560	
8,700.0	7,100.0	8,729.0	7,100.0	40.1	42.0	-90.00	-1,937.3	728.3	1,108.9	1,029.3	79.63	13.926	
8,800.0	7,100.0	8,829.0	7,100.0	41.8	43.7	-90.00	-2,037.3	728.3	1,109.8	1,026.6	83.19	13.341	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 3-17H20 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,100.0	8,929.0	7,100.0	43.6	45.4	-90.00	-2,137.3	728.3	1,110.7	1,024.0	86.77	12.800	
9,000.0	7,100.0	9,029.0	7,100.0	45.4	47.2	-90.00	-2,237.3	728.3	1,111.6	1,021.3	90.38	12.300	
9,100.0	7,100.0	9,129.0	7,100.0	47.2	48.9	-90.00	-2,337.3	728.3	1,112.6	1,018.6	94.01	11.835	
9,200.0	7,100.0	9,229.0	7,100.0	49.0	50.7	-90.00	-2,437.3	728.3	1,113.5	1,015.8	97.65	11.402	
9,300.0	7,100.0	9,329.0	7,100.0	50.8	52.5	-90.00	-2,537.3	728.3	1,114.4	1,013.1	101.32	10.999	
9,400.0	7,100.0	9,429.0	7,100.0	52.6	54.3	-90.00	-2,637.3	728.3	1,115.3	1,010.3	104.99	10.623	
9,500.0	7,100.0	9,529.0	7,100.0	54.4	56.1	-90.00	-2,737.3	728.3	1,116.3	1,007.6	108.68	10.271	
9,600.0	7,100.0	9,629.0	7,100.0	56.3	57.9	-90.00	-2,837.3	728.3	1,117.2	1,004.8	112.38	9.941	
9,700.0	7,100.0	9,729.0	7,100.0	58.1	59.7	-90.00	-2,937.3	728.3	1,118.1	1,002.0	116.09	9.631	
9,800.0	7,100.0	9,829.0	7,100.0	59.9	61.5	-90.00	-3,037.3	728.3	1,119.0	999.2	119.81	9.340	
9,900.0	7,100.0	9,929.0	7,100.0	61.8	63.4	-90.00	-3,137.3	728.3	1,119.9	996.4	123.54	9.066	
10,000.0	7,100.0	10,028.9	7,100.0	63.7	65.2	-90.00	-3,237.3	728.3	1,120.9	993.6	127.27	8.807	
10,100.0	7,100.0	10,128.9	7,100.0	65.5	67.0	-90.00	-3,337.3	728.3	1,121.8	990.8	131.01	8.562	
10,200.0	7,100.0	10,228.9	7,100.0	67.4	68.9	-90.00	-3,437.3	728.3	1,122.7	988.0	134.76	8.331	
10,300.0	7,100.0	10,328.9	7,100.0	69.2	70.7	-90.00	-3,537.3	728.3	1,123.6	985.1	138.52	8.112	
10,400.0	7,100.0	10,428.9	7,100.0	71.1	72.6	-90.00	-3,637.3	728.3	1,124.6	982.3	142.28	7.904	
10,500.0	7,100.0	10,528.9	7,100.0	73.0	74.5	-90.00	-3,737.3	728.3	1,125.5	979.4	146.04	7.706	
10,600.0	7,100.0	10,628.9	7,100.0	74.9	76.3	-90.00	-3,837.2	728.3	1,126.4	976.6	149.82	7.519	
10,700.0	7,100.0	10,728.9	7,100.0	76.7	78.2	-90.00	-3,937.2	728.3	1,127.3	973.7	153.59	7.340	
10,800.0	7,100.0	10,828.9	7,100.0	78.6	80.0	-90.00	-4,037.2	728.3	1,128.3	970.9	157.37	7.169	
10,900.0	7,100.0	10,928.9	7,100.0	80.5	81.9	-90.00	-4,137.2	728.3	1,129.2	968.0	161.15	7.007	
11,000.0	7,100.0	11,028.9	7,100.0	82.4	83.8	-90.00	-4,237.2	728.3	1,130.1	965.2	164.94	6.852	
11,100.0	7,100.0	11,128.9	7,100.0	84.3	85.7	-90.00	-4,337.2	728.3	1,131.0	962.3	168.73	6.703	
11,200.0	7,100.0	11,228.9	7,100.0	86.2	87.6	-90.00	-4,437.2	728.3	1,131.9	959.4	172.52	6.561	
11,300.0	7,100.0	11,328.9	7,100.0	88.1	89.4	-90.00	-4,537.2	728.3	1,132.9	956.5	176.32	6.425	
11,400.0	7,100.0	11,428.9	7,100.0	90.0	91.3	-90.00	-4,637.2	728.3	1,133.8	953.7	180.11	6.295	
11,500.0	7,100.0	11,528.9	7,100.0	91.8	93.2	-90.00	-4,737.2	728.3	1,134.7	950.8	183.91	6.170	
11,600.0	7,100.0	11,628.9	7,100.0	93.7	95.1	-90.00	-4,837.2	728.3	1,135.6	947.9	187.72	6.050	
11,700.0	7,100.0	11,728.9	7,100.0	95.6	97.0	-90.00	-4,937.2	728.3	1,136.6	945.0	191.52	5.934	
11,800.0	7,100.0	11,828.9	7,100.0	97.5	98.9	-90.00	-5,037.2	728.3	1,137.5	942.1	195.33	5.823	
11,892.4	7,100.0	11,921.2	7,100.0	99.3	100.6	-90.00	-5,129.6	728.3	1,138.3	939.5	198.85	5.725	
11,900.0	7,100.0	11,928.9	7,100.0	99.4	100.8	-90.00	-5,137.2	728.3	1,138.4	939.3	199.11	5.717	
11,958.5	7,100.0	11,987.3	7,100.0	100.4	101.9	-90.00	-5,195.6	728.3	1,139.7	938.7	201.01	5.670	
12,000.0	7,100.0	12,028.8	7,100.0	101.1	102.7	-90.00	-5,237.2	728.3	1,141.0	938.5	202.54	5.634	
12,100.0	7,100.0	12,128.8	7,100.0	103.0	104.5	-90.00	-5,337.1	728.3	1,144.3	937.9	206.34	5.545	
12,200.0	7,100.0	12,228.7	7,100.0	104.9	106.4	-90.00	-5,437.1	728.3	1,147.5	937.4	210.15	5.460	
12,300.0	7,100.0	12,328.7	7,100.0	106.8	108.3	-90.00	-5,537.0	728.3	1,150.7	936.8	213.95	5.378	
12,400.0	7,100.0	12,428.6	7,100.0	108.7	110.2	-90.00	-5,636.9	728.3	1,154.0	936.2	217.76	5.299	
12,500.0	7,100.0	12,528.6	7,100.0	110.6	112.1	-90.00	-5,736.9	728.3	1,157.2	935.6	221.57	5.223	
12,600.0	7,100.0	12,628.5	7,100.0	112.5	114.0	-90.00	-5,836.8	728.3	1,160.4	935.0	225.38	5.149	
12,700.0	7,100.0	12,728.5	7,100.0	114.4	115.9	-90.00	-5,936.8	728.3	1,163.6	934.5	229.19	5.077	
12,800.0	7,100.0	12,828.4	7,100.0	116.3	117.8	-90.00	-6,036.7	728.3	1,166.9	933.9	233.01	5.008	
12,900.0	7,100.0	12,928.4	7,100.0	118.2	119.7	-90.00	-6,136.7	728.3	1,170.1	933.3	236.82	4.941	
13,000.0	7,100.0	13,028.3	7,100.0	120.1	121.6	-90.00	-6,236.6	728.3	1,173.3	932.7	240.63	4.876	
13,100.0	7,100.0	13,128.3	7,100.0	122.0	123.5	-90.00	-6,336.6	728.3	1,176.6	932.1	244.45	4.813	
13,200.0	7,100.0	13,228.2	7,100.0	123.9	125.5	-90.00	-6,436.5	728.3	1,179.8	931.5	248.27	4.752	
13,300.0	7,100.0	13,328.2	7,100.0	125.8	127.4	-90.00	-6,536.5	728.3	1,183.0	930.9	252.09	4.693	
13,400.0	7,100.0	13,428.1	7,100.0	127.7	129.3	-90.00	-6,636.4	728.3	1,186.3	930.3	255.90	4.636	
13,500.0	7,100.0	13,528.0	7,100.0	129.6	131.2	-90.00	-6,736.4	728.3	1,189.5	929.8	259.72	4.580	
13,600.0	7,100.0	13,628.0	7,100.0	131.5	133.1	-90.00	-6,836.3	728.3	1,192.7	929.2	263.54	4.526	
13,700.0	7,100.0	13,727.9	7,100.0	133.4	135.0	-90.00	-6,936.3	728.3	1,195.9	928.6	267.37	4.473	
13,800.0	7,100.0	13,827.9	7,100.0	135.4	136.9	-90.00	-7,036.2	728.3	1,199.2	928.0	271.19	4.422	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 3-17H20 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,900.0	7,100.0	13,927.8	7,100.0	137.3	138.8	-90.00	-7,136.2	728.3	1,202.4	927.4	275.01	4.372	
14,000.0	7,100.0	14,027.8	7,100.0	139.2	140.7	-90.00	-7,236.1	728.3	1,205.6	926.8	278.83	4.324	
14,100.0	7,100.0	14,127.7	7,100.0	141.1	142.6	-90.00	-7,336.1	728.3	1,208.9	926.2	282.66	4.277	
14,200.0	7,100.0	14,227.7	7,100.0	143.0	144.5	-90.00	-7,436.0	728.3	1,212.1	925.6	286.48	4.231	
14,300.0	7,100.0	14,327.6	7,100.0	144.9	146.5	-90.00	-7,536.0	728.3	1,215.3	925.0	290.31	4.186	
14,400.0	7,100.0	14,427.6	7,100.0	146.8	148.4	-90.00	-7,635.9	728.3	1,218.5	924.4	294.13	4.143	
14,500.0	7,100.0	14,527.5	7,100.0	148.7	150.3	-90.00	-7,735.9	728.3	1,221.8	923.8	297.96	4.100	
14,600.0	7,100.0	14,627.5	7,100.0	150.6	152.2	-90.00	-7,835.8	728.3	1,225.0	923.2	301.79	4.059	
14,700.0	7,100.0	14,727.4	7,100.0	152.5	154.1	-90.00	-7,935.7	728.3	1,228.2	922.6	305.62	4.019	
14,800.0	7,100.0	14,827.4	7,100.0	154.4	156.0	-90.00	-8,035.7	728.3	1,231.5	922.0	309.44	3.980	
14,900.0	7,100.0	14,927.3	7,100.0	156.3	157.9	-90.00	-8,135.6	728.3	1,234.7	921.4	313.27	3.941	
15,000.0	7,100.0	15,027.3	7,100.0	158.2	159.9	-90.00	-8,235.6	728.3	1,237.9	920.8	317.10	3.904	
15,100.0	7,100.0	15,127.2	7,100.0	160.1	161.8	-90.00	-8,335.5	728.3	1,241.1	920.2	320.93	3.867	
15,200.0	7,100.0	15,227.2	7,100.0	162.1	163.7	-90.00	-8,435.5	728.3	1,244.4	919.6	324.76	3.832	
15,300.0	7,100.0	15,327.1	7,100.0	164.0	165.6	-90.00	-8,535.4	728.3	1,247.6	919.0	328.59	3.797	
15,400.0	7,100.0	15,427.1	7,100.0	165.9	167.5	-90.00	-8,635.4	728.3	1,250.8	918.4	332.42	3.763	
15,500.0	7,100.0	15,527.0	7,100.0	167.8	169.4	-90.00	-8,735.3	728.3	1,254.1	917.8	336.25	3.730	
15,600.0	7,100.0	15,627.0	7,100.0	169.7	171.3	-90.00	-8,835.3	728.3	1,257.3	917.2	340.08	3.697	
15,700.0	7,100.0	15,726.9	7,100.0	171.6	173.3	-90.00	-8,935.2	728.3	1,260.5	916.6	343.92	3.665	
15,800.0	7,100.0	15,826.8	7,100.0	173.5	175.2	-90.00	-9,035.2	728.3	1,263.8	916.0	347.75	3.634	
15,900.0	7,100.0	15,926.8	7,100.0	175.4	177.1	-90.00	-9,135.1	728.3	1,267.0	915.4	351.58	3.604	
16,000.0	7,100.0	16,026.7	7,100.0	177.3	179.0	-90.00	-9,235.1	728.3	1,270.2	914.8	355.41	3.574	
16,100.0	7,100.0	16,126.7	7,100.0	179.2	180.9	-90.00	-9,335.0	728.3	1,273.4	914.2	359.25	3.545	
16,200.0	7,100.0	16,226.6	7,100.0	181.2	182.9	-90.00	-9,435.0	728.3	1,276.7	913.6	363.08	3.516	
16,300.0	7,100.0	16,326.6	7,100.0	183.1	184.8	-90.00	-9,534.9	728.3	1,279.9	913.0	366.91	3.488	
16,400.0	7,100.0	16,426.5	7,100.0	185.0	186.7	-90.00	-9,634.9	728.3	1,283.1	912.4	370.75	3.461	
16,500.0	7,100.0	16,526.5	7,100.0	186.9	188.6	-90.00	-9,734.8	728.3	1,286.4	911.8	374.58	3.434	
16,600.0	7,100.0	16,626.4	7,100.0	188.8	190.5	-90.00	-9,834.8	728.3	1,289.6	911.2	378.42	3.408	
16,700.0	7,100.0	16,726.4	7,100.0	190.7	192.5	-90.00	-9,934.7	728.3	1,292.8	910.6	382.25	3.382	
16,800.0	7,100.0	16,826.3	7,100.0	192.6	194.4	-90.00	-10,034.7	728.3	1,296.0	910.0	386.09	3.357	
16,900.0	7,100.0	16,926.3	7,100.0	194.5	196.3	-90.00	-10,134.6	728.3	1,299.3	909.3	389.92	3.332	
16,912.3	7,100.0	16,938.6	7,100.0	194.8	196.5	-90.00	-10,146.9	728.3	1,299.7	909.3	390.40	3.329	
16,913.0	7,100.0	16,939.3	7,100.0	194.8	196.5	-90.00	-10,147.6	728.3	1,299.7	909.3	390.42	3.329	SF

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 4-17H20 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.79	-0.8	59.9	60.0				
100.0	100.0	100.0	100.0	0.1	0.1	90.79	-0.8	59.9	60.0	59.8	0.19	317.556	
200.0	200.0	200.0	200.0	0.3	0.3	90.79	-0.8	59.9	60.0	59.3	0.64	93.925	
300.0	300.0	300.0	300.0	0.5	0.5	90.79	-0.8	59.9	60.0	58.9	1.09	55.113	
400.0	400.0	400.0	400.0	0.8	0.8	90.79	-0.8	59.9	60.0	58.4	1.54	38.998	
500.0	500.0	500.0	500.0	1.0	1.0	90.79	-0.8	59.9	60.0	58.0	1.99	30.175	CC, ES
600.0	600.0	597.9	597.9	1.2	1.2	-127.32	-0.8	61.6	62.7	60.3	2.40	26.135	
673.0	672.9	670.7	670.7	1.3	1.4	-129.58	-0.8	64.0	67.3	64.6	2.69	25.026	
700.0	699.8	697.6	697.6	1.4	1.4	-130.59	-0.8	64.9	69.2	66.4	2.80	24.760	
800.0	799.7	797.3	797.1	1.6	1.6	-133.85	-0.8	68.2	76.6	73.4	3.21	23.879	
900.0	899.5	896.9	896.7	1.8	1.8	-136.53	-0.8	71.5	84.2	80.5	3.63	23.171	
1,000.0	999.3	996.6	996.3	2.0	2.1	-138.77	-0.8	74.8	91.9	87.8	4.06	22.602	
1,100.0	1,099.1	1,096.2	1,095.9	2.3	2.3	-140.66	-0.8	78.1	99.7	95.2	4.50	22.140	
1,200.0	1,198.9	1,195.8	1,195.5	2.5	2.5	-142.28	-0.8	81.4	107.6	102.7	4.95	21.760	
1,300.0	1,298.8	1,295.5	1,295.1	2.8	2.7	-143.67	-0.8	84.7	115.6	110.2	5.39	21.445	
1,328.4	1,327.1	1,323.8	1,323.4	2.8	2.8	-144.03	-0.8	85.7	117.9	112.4	5.52	21.364	
1,400.0	1,398.6	1,395.2	1,394.7	3.0	3.0	-144.70	-0.8	88.0	123.0	117.1	5.83	21.091	
1,501.4	1,500.0	1,500.5	1,500.0	3.2	3.2	71.92	-0.8	89.9	126.2	119.9	6.30	20.020	
1,600.0	1,598.6	1,599.1	1,598.6	3.4	3.4	71.92	-0.8	89.9	126.2	119.5	6.70	18.834	
1,700.0	1,698.6	1,699.1	1,698.6	3.6	3.6	71.92	-0.8	89.9	126.2	119.1	7.11	17.739	
1,800.0	1,798.6	1,799.1	1,798.6	3.8	3.8	71.92	-0.8	89.9	126.2	118.7	7.53	16.756	
1,900.0	1,898.6	1,899.1	1,898.6	4.0	4.0	71.92	-0.8	89.9	126.2	118.2	7.95	15.868	
2,000.0	1,998.6	1,999.1	1,998.6	4.2	4.2	71.92	-0.8	89.9	126.2	117.8	8.38	15.065	
2,100.0	2,098.6	2,099.1	2,098.6	4.4	4.4	71.92	-0.8	89.9	126.2	117.4	8.80	14.335	
2,200.0	2,198.6	2,199.1	2,198.6	4.6	4.7	71.92	-0.8	89.9	126.2	117.0	9.23	13.669	
2,300.0	2,298.6	2,299.1	2,298.6	4.8	4.9	71.92	-0.8	89.9	126.2	116.5	9.66	13.060	
2,400.0	2,398.6	2,399.1	2,398.6	5.0	5.1	71.92	-0.8	89.9	126.2	116.1	10.09	12.500	
2,500.0	2,498.6	2,499.1	2,498.6	5.2	5.3	71.92	-0.8	89.9	126.2	115.7	10.53	11.985	
2,600.0	2,598.6	2,599.1	2,598.6	5.5	5.5	71.92	-0.8	89.9	126.2	115.2	10.96	11.510	
2,700.0	2,698.6	2,699.1	2,698.6	5.7	5.8	71.92	-0.8	89.9	126.2	114.8	11.40	11.069	
2,800.0	2,798.6	2,799.1	2,798.6	5.9	6.0	71.92	-0.8	89.9	126.2	114.3	11.84	10.661	
2,900.0	2,898.6	2,899.1	2,898.6	6.1	6.2	71.92	-0.8	89.9	126.2	113.9	12.27	10.280	
3,000.0	2,998.6	2,999.1	2,998.6	6.3	6.4	71.92	-0.8	89.9	126.2	113.5	12.71	9.925	
3,100.0	3,098.6	3,099.1	3,098.6	6.5	6.6	71.92	-0.8	89.9	126.2	113.0	13.15	9.594	
3,200.0	3,198.6	3,199.1	3,198.6	6.8	6.9	71.92	-0.8	89.9	126.2	112.6	13.59	9.283	
3,300.0	3,298.6	3,299.1	3,298.6	7.0	7.1	71.92	-0.8	89.9	126.2	112.1	14.03	8.991	
3,400.0	3,398.6	3,399.1	3,398.6	7.2	7.3	71.92	-0.8	89.9	126.2	111.7	14.48	8.717	
3,500.0	3,498.6	3,499.1	3,498.6	7.4	7.5	71.92	-0.8	89.9	126.2	111.3	14.92	8.459	
3,600.0	3,598.6	3,599.1	3,598.6	7.6	7.7	71.92	-0.8	89.9	126.2	110.8	15.36	8.215	
3,700.0	3,698.6	3,699.1	3,698.6	7.9	8.0	71.92	-0.8	89.9	126.2	110.4	15.80	7.985	
3,800.0	3,798.6	3,799.1	3,798.6	8.1	8.2	71.92	-0.8	89.9	126.2	109.9	16.25	7.767	
3,900.0	3,898.6	3,899.1	3,898.6	8.3	8.4	71.92	-0.8	89.9	126.2	109.5	16.69	7.561	
4,000.0	3,998.6	3,999.1	3,998.6	8.5	8.6	71.92	-0.8	89.9	126.2	109.1	17.13	7.365	
4,100.0	4,098.6	4,094.9	4,094.5	8.7	8.8	72.06	-0.7	91.5	127.8	110.2	17.56	7.276	
4,200.0	4,198.6	4,190.6	4,190.0	9.0	9.1	72.49	-0.2	96.3	132.7	114.7	17.99	7.373	
4,300.0	4,298.6	4,285.8	4,284.8	9.2	9.3	73.13	0.7	104.1	140.8	122.4	18.43	7.640	
4,400.0	4,398.6	4,380.3	4,378.7	9.4	9.5	73.91	1.8	115.0	152.2	133.4	18.88	8.065	
4,500.0	4,498.6	4,474.1	4,471.4	9.6	9.7	74.75	3.3	128.9	166.9	147.6	19.33	8.633	
4,600.0	4,598.6	4,566.8	4,562.6	9.8	10.0	75.60	5.1	145.5	184.8	165.0	19.80	9.332	
4,700.0	4,698.6	4,659.5	4,653.2	10.1	10.2	76.41	7.2	165.1	205.7	185.5	20.28	10.144	
4,800.0	4,798.6	4,757.0	4,748.3	10.3	10.5	77.14	9.5	186.6	227.8	207.0	20.80	10.953	
4,900.0	4,898.6	4,854.5	4,843.3	10.5	10.8	77.74	11.7	208.2	249.9	228.6	21.33	11.718	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 4-17H20 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.6	4,952.0	4,938.4	10.7	11.2	78.25	14.0	229.7	272.0	250.2	21.87	12.441	
5,100.0	5,098.6	5,049.5	5,033.4	10.9	11.5	78.68	16.3	251.3	294.2	271.8	22.42	13.124	
5,200.0	5,198.6	5,147.0	5,128.5	11.2	11.8	79.04	18.6	272.8	316.3	293.4	22.97	13.769	
5,300.0	5,298.6	5,244.5	5,223.6	11.4	12.2	79.36	20.9	294.4	338.5	315.0	23.54	14.379	
5,400.0	5,398.6	5,342.0	5,318.6	11.6	12.5	79.65	23.2	316.0	360.7	336.6	24.12	14.955	
5,500.7	5,499.3	5,440.2	5,414.3	11.8	12.9	79.90	25.5	337.7	383.0	358.3	24.70	15.504	
5,600.0	5,598.6	5,536.6	5,508.3	12.1	13.3	-174.40	27.8	359.0	406.7	382.7	24.03	16.924	
5,700.0	5,698.4	5,632.8	5,602.1	12.3	13.6	-174.22	30.1	380.3	433.9	409.5	24.42	17.766	
5,800.0	5,798.1	5,728.0	5,695.0	12.5	14.0	-174.08	32.3	401.3	464.5	439.7	24.80	18.729	
5,900.0	5,897.3	5,822.1	5,786.7	12.7	14.4	-174.00	34.5	422.1	498.3	473.1	25.16	19.809	
6,000.0	5,996.1	5,915.0	5,877.3	12.9	14.8	-173.94	36.7	442.7	535.4	509.9	25.49	21.000	
6,104.3	6,098.5	6,010.4	5,970.3	13.2	15.1	-173.91	38.9	463.8	577.4	551.6	25.83	22.360	
6,200.0	6,192.0	6,097.2	6,055.0	13.5	15.5	-173.99	41.0	483.0	617.6	591.4	26.23	23.547	
6,300.0	6,289.8	6,188.0	6,143.4	13.7	15.9	-174.05	43.1	503.0	659.6	633.0	26.66	24.746	
6,400.0	6,387.6	6,278.7	6,231.9	14.0	16.3	-174.11	45.2	523.1	701.6	674.5	27.09	25.904	
6,500.0	6,485.4	6,369.5	6,320.4	14.3	16.6	-174.17	47.4	543.2	743.6	716.1	27.52	27.023	
6,518.7	6,503.7	6,386.5	6,337.0	14.4	16.7	-174.18	47.8	546.9	751.5	723.9	27.60	27.229	
6,550.0	6,534.2	6,414.7	6,364.5	14.5	16.8	-160.83	48.4	553.2	764.8	737.2	27.67	27.637	
6,600.0	6,582.4	6,450.0	6,398.9	14.6	17.0	-145.06	49.3	561.0	787.1	759.3	27.80	28.317	
6,650.0	6,629.7	6,470.0	6,418.2	14.8	17.1	-133.91	49.7	565.9	811.5	783.5	27.94	29.045	
6,700.0	6,675.7	6,500.0	6,447.0	15.0	17.2	-125.78	50.0	574.5	838.1	809.9	28.16	29.759	
6,750.0	6,720.0	6,500.0	6,447.0	15.2	17.2	-118.42	50.0	574.5	866.2	837.7	28.43	30.467	
6,800.0	6,762.3	6,518.3	6,464.3	15.4	17.3	-112.47	50.1	580.5	896.0	867.2	28.81	31.096	
6,850.0	6,802.3	6,531.9	6,477.0	15.6	17.4	-106.90	50.1	585.3	927.2	898.0	29.28	31.670	
6,900.0	6,839.6	6,550.0	6,493.8	15.9	17.5	-101.92	50.1	592.1	959.6	929.8	29.80	32.200	
6,950.0	6,874.0	6,550.0	6,493.8	16.2	17.5	-96.24	50.1	592.1	992.8	962.5	30.36	32.700	
7,000.0	6,905.3	6,550.0	6,493.8	16.5	17.5	-90.67	50.1	592.1	1,026.9	996.1	30.89	33.240	
7,050.0	6,933.1	6,572.5	6,514.3	16.9	17.7	-86.69	49.9	601.3	1,061.0	1,029.6	31.38	33.809	
7,064.4	6,940.5	6,574.6	6,516.2	17.0	17.7	-85.32	49.8	602.2	1,071.0	1,039.5	31.50	33.995	
7,100.0	6,958.3	6,579.6	6,520.7	17.3	17.7	-85.63	49.8	604.4	1,095.8	1,064.0	31.82	34.442	
7,200.0	7,008.3	6,600.0	6,538.9	18.1	17.9	-86.90	49.4	613.7	1,168.3	1,135.5	32.78	35.641	
7,214.4	7,015.5	6,600.0	6,538.9	18.3	17.9	-86.90	49.4	613.7	1,179.0	1,146.1	32.92	35.813	
7,250.0	7,032.4	6,600.0	6,538.9	18.6	17.9	-82.69	49.4	613.7	1,205.4	1,172.2	33.18	36.328	
7,300.0	7,053.2	6,600.0	6,538.9	19.1	17.9	-77.35	49.4	613.7	1,241.9	1,208.6	33.37	37.212	
7,350.0	7,070.3	6,600.0	6,538.9	19.7	17.9	-72.67	49.4	613.7	1,277.6	1,244.2	33.40	38.253	
7,400.0	7,083.6	6,600.0	6,538.9	20.2	17.9	-68.61	49.4	613.7	1,312.2	1,278.9	33.30	39.409	
7,450.0	7,093.0	6,616.1	6,553.0	20.8	18.0	-66.04	49.0	621.4	1,345.3	1,312.0	33.28	40.420	
7,500.0	7,098.5	6,617.8	6,554.4	21.4	18.0	-63.16	49.0	622.3	1,377.2	1,344.1	33.11	41.597	
7,543.0	7,100.0	6,618.5	6,555.0	22.0	18.0	-61.04	49.0	622.6	1,403.5	1,370.5	32.96	42.588	
7,600.0	7,100.0	6,618.9	6,555.4	22.7	18.0	-61.07	49.0	622.9	1,438.3	1,404.7	33.61	42.798	
7,700.0	7,100.0	6,619.7	6,556.1	24.0	18.0	-61.11	48.9	623.3	1,502.6	1,467.8	34.80	43.174	
7,800.0	7,100.0	6,620.6	6,556.8	25.4	18.0	-61.15	48.9	623.7	1,570.6	1,534.5	36.07	43.541	
7,900.0	7,100.0	6,621.4	6,557.6	26.9	18.0	-61.19	48.9	624.1	1,641.9	1,604.5	37.40	43.899	
8,000.0	7,100.0	6,622.2	6,558.3	28.4	18.0	-61.23	48.9	624.5	1,716.1	1,677.3	38.78	44.248	
8,100.0	7,100.0	8,694.9	7,100.0	30.0	41.9	-90.00	-1,340.5	1,403.8	1,778.8	1,718.3	60.54	29.382	
8,200.0	7,100.0	8,794.9	7,100.0	31.6	43.0	-90.00	-1,440.5	1,403.6	1,779.5	1,715.7	63.79	27.895	
8,300.0	7,100.0	8,894.9	7,100.0	33.2	44.2	-90.00	-1,540.5	1,403.4	1,780.3	1,713.2	67.11	26.527	
8,400.0	7,100.0	8,994.9	7,100.0	34.9	45.5	-90.00	-1,640.5	1,403.2	1,781.0	1,710.5	70.49	25.268	
8,500.0	7,100.0	9,094.9	7,100.0	36.6	46.8	-90.00	-1,740.5	1,403.1	1,781.8	1,707.9	73.91	24.109	
8,600.0	7,100.0	9,194.9	7,100.0	38.3	48.2	-90.00	-1,840.5	1,402.9	1,782.5	1,705.2	77.37	23.040	
8,700.0	7,100.0	9,294.9	7,100.0	40.1	49.6	-90.00	-1,940.5	1,402.7	1,783.3	1,702.4	80.86	22.053	
8,800.0	7,100.0	9,394.9	7,100.0	41.8	51.0	-90.00	-2,040.5	1,402.5	1,784.0	1,699.6	84.39	21.140	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 4-17H20 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,100.0	9,494.9	7,100.0	43.6	52.5	-90.00	-2,140.5	1,402.4	1,784.8	1,696.8	87.95	20.293	
9,000.0	7,100.0	9,594.9	7,100.0	45.4	54.0	-90.00	-2,240.5	1,402.2	1,785.5	1,694.0	91.53	19.508	
9,100.0	7,100.0	9,694.9	7,100.0	47.2	55.5	-90.00	-2,340.5	1,402.0	1,786.3	1,691.1	95.13	18.777	
9,200.0	7,100.0	9,794.9	7,100.0	49.0	57.1	-90.00	-2,440.5	1,401.8	1,787.0	1,688.2	98.75	18.096	
9,300.0	7,100.0	9,894.9	7,100.0	50.8	58.6	-90.00	-2,540.5	1,401.6	1,787.7	1,685.4	102.39	17.460	
9,400.0	7,100.0	9,994.9	7,100.0	52.6	60.2	-90.00	-2,640.5	1,401.5	1,788.5	1,682.4	106.04	16.865	
9,500.0	7,100.0	10,094.9	7,100.0	54.4	61.9	-90.00	-2,740.5	1,401.3	1,789.2	1,679.5	109.71	16.308	
9,600.0	7,100.0	10,194.9	7,100.0	56.3	63.5	-90.00	-2,840.5	1,401.1	1,790.0	1,676.6	113.39	15.786	
9,700.0	7,100.0	10,294.9	7,100.0	58.1	65.1	-90.00	-2,940.5	1,400.9	1,790.7	1,673.6	117.09	15.294	
9,800.0	7,100.0	10,394.9	7,100.0	59.9	66.8	-90.00	-3,040.5	1,400.8	1,791.5	1,670.7	120.79	14.832	
9,900.0	7,100.0	10,494.9	7,100.0	61.8	68.5	-90.00	-3,140.5	1,400.6	1,792.2	1,667.7	124.50	14.395	
10,000.0	7,100.0	10,594.9	7,100.0	63.7	70.2	-90.00	-3,240.4	1,400.4	1,793.0	1,664.7	128.22	13.984	
10,100.0	7,100.0	10,694.9	7,100.0	65.5	71.9	-90.00	-3,340.4	1,400.2	1,793.7	1,661.8	131.95	13.594	
10,200.0	7,100.0	10,794.9	7,100.0	67.4	73.6	-90.00	-3,440.4	1,400.1	1,794.5	1,658.8	135.68	13.225	
10,300.0	7,100.0	10,894.9	7,100.0	69.2	75.4	-90.00	-3,540.4	1,399.9	1,795.2	1,655.8	139.43	12.876	
10,400.0	7,100.0	10,994.9	7,100.0	71.1	77.1	-90.00	-3,640.4	1,399.7	1,795.9	1,652.8	143.17	12.544	
10,500.0	7,100.0	11,094.9	7,100.0	73.0	78.9	-90.00	-3,740.4	1,399.5	1,796.7	1,649.8	146.93	12.228	
10,600.0	7,100.0	11,194.9	7,100.0	74.9	80.6	-90.00	-3,840.4	1,399.3	1,797.4	1,646.8	150.69	11.928	
10,700.0	7,100.0	11,294.9	7,100.0	76.7	82.4	-90.00	-3,940.4	1,399.2	1,798.2	1,643.7	154.45	11.642	
10,800.0	7,100.0	11,394.8	7,100.0	78.6	84.2	-90.00	-4,040.4	1,399.0	1,798.9	1,640.7	158.22	11.370	
10,900.0	7,100.0	11,494.8	7,100.0	80.5	86.0	-90.00	-4,140.4	1,398.8	1,799.7	1,637.7	161.99	11.110	
11,000.0	7,100.0	11,594.8	7,100.0	82.4	87.7	-90.00	-4,240.4	1,398.6	1,800.4	1,634.7	165.77	10.861	
11,100.0	7,100.0	11,694.8	7,100.0	84.3	89.5	-90.00	-4,340.4	1,398.5	1,801.2	1,631.6	169.55	10.623	
11,200.0	7,100.0	11,794.8	7,100.0	86.2	91.3	-90.00	-4,440.4	1,398.3	1,801.9	1,628.6	173.33	10.396	
11,300.0	7,100.0	11,894.8	7,100.0	88.1	93.2	-90.00	-4,540.4	1,398.1	1,802.7	1,625.5	177.12	10.178	
11,400.0	7,100.0	11,994.8	7,100.0	90.0	95.0	-90.00	-4,640.4	1,397.9	1,803.4	1,622.5	180.91	9.969	
11,500.0	7,100.0	12,094.8	7,100.0	91.8	96.8	-90.00	-4,740.4	1,397.7	1,804.1	1,619.4	184.70	9.768	
11,600.0	7,100.0	12,194.8	7,100.0	93.7	98.6	-90.00	-4,840.4	1,397.6	1,804.9	1,616.4	188.50	9.575	
11,700.0	7,100.0	12,294.8	7,100.0	95.6	100.4	-90.00	-4,940.4	1,397.4	1,805.6	1,613.3	192.29	9.390	
11,800.0	7,100.0	12,394.8	7,100.0	97.5	102.3	-90.00	-5,040.4	1,397.2	1,806.4	1,610.3	196.09	9.212	
11,892.4	7,100.0	12,487.2	7,100.0	99.3	104.0	-90.00	-5,132.8	1,397.1	1,807.1	1,607.5	199.61	9.053	
11,900.0	7,100.0	12,494.8	7,100.0	99.4	104.1	-90.00	-5,140.4	1,397.0	1,807.1	1,607.3	199.83	9.043	
11,958.5	7,100.0	12,553.3	7,100.0	100.4	105.2	-90.00	-5,198.8	1,396.9	1,808.3	1,606.9	201.46	8.976	
12,000.0	7,100.0	12,594.8	7,100.0	101.1	105.9	-90.00	-5,240.4	1,396.9	1,809.6	1,606.6	202.99	8.915	
12,100.0	7,100.0	12,694.7	7,100.0	103.0	107.8	-90.00	-5,340.3	1,396.7	1,812.7	1,605.9	206.79	8.766	
12,200.0	7,100.0	12,794.7	7,100.0	104.9	109.6	-90.00	-5,440.3	1,396.5	1,815.7	1,605.1	210.59	8.622	
12,300.0	7,100.0	12,894.6	7,100.0	106.8	111.5	-90.00	-5,540.2	1,396.3	1,818.8	1,604.4	214.39	8.484	
12,400.0	7,100.0	12,994.6	7,100.0	108.7	113.3	-90.00	-5,640.2	1,396.2	1,821.8	1,603.6	218.19	8.350	
12,500.0	7,100.0	13,094.6	7,100.0	110.6	115.2	-90.00	-5,740.1	1,396.0	1,824.9	1,602.9	221.99	8.220	
12,600.0	7,100.0	13,194.5	7,100.0	112.5	117.0	-90.00	-5,840.1	1,395.8	1,827.9	1,602.1	225.80	8.095	
12,700.0	7,100.0	13,294.5	7,100.0	114.4	118.9	-90.00	-5,940.0	1,395.6	1,831.0	1,601.4	229.60	7.974	
12,800.0	7,100.0	13,394.4	7,100.0	116.3	120.7	-90.00	-6,040.0	1,395.4	1,834.0	1,600.6	233.41	7.857	
12,900.0	7,100.0	13,494.4	7,100.0	118.2	122.6	-90.00	-6,139.9	1,395.3	1,837.1	1,599.9	237.22	7.744	
13,000.0	7,100.0	13,594.3	7,100.0	120.1	124.5	-90.00	-6,239.9	1,395.1	1,840.1	1,599.1	241.03	7.634	
13,100.0	7,100.0	13,694.3	7,100.0	122.0	126.3	-90.00	-6,339.8	1,394.9	1,843.2	1,598.3	244.84	7.528	
13,200.0	7,100.0	13,794.2	7,100.0	123.9	128.2	-90.00	-6,439.8	1,394.7	1,846.2	1,597.6	248.66	7.425	
13,300.0	7,100.0	13,894.2	7,100.0	125.8	130.1	-90.00	-6,539.8	1,394.6	1,849.3	1,596.8	252.47	7.325	
13,400.0	7,100.0	13,994.1	7,100.0	127.7	132.0	-90.00	-6,639.7	1,394.4	1,852.3	1,596.0	256.28	7.228	
13,500.0	7,100.0	14,094.1	7,100.0	129.6	133.8	-90.00	-6,739.7	1,394.2	1,855.4	1,595.3	260.10	7.133	
13,600.0	7,100.0	14,194.0	7,100.0	131.5	135.7	-90.00	-6,839.6	1,394.0	1,858.4	1,594.5	263.92	7.042	
13,700.0	7,100.0	14,294.0	7,100.0	133.4	137.6	-90.00	-6,939.6	1,393.9	1,861.5	1,593.8	267.73	6.953	
13,800.0	7,100.0	14,393.9	7,100.0	135.4	139.5	-90.00	-7,039.5	1,393.7	1,864.5	1,593.0	271.55	6.866	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Castle 0780 4-17H20 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,900.0	7,100.0	14,493.9	7,100.0	137.3	141.3	-90.00	-7,139.5	1,393.5	1,867.6	1,592.2	275.37	6.782	
14,000.0	7,100.0	14,593.9	7,100.0	139.2	143.2	-90.00	-7,239.4	1,393.3	1,870.6	1,591.5	279.19	6.700	
14,100.0	7,100.0	14,693.8	7,100.0	141.1	145.1	-90.00	-7,339.4	1,393.1	1,873.7	1,590.7	283.01	6.621	
14,200.0	7,100.0	14,793.8	7,100.0	143.0	147.0	-90.00	-7,439.3	1,393.0	1,876.8	1,589.9	286.83	6.543	
14,300.0	7,100.0	14,893.7	7,100.0	144.9	148.9	-90.00	-7,539.3	1,392.8	1,879.8	1,589.2	290.65	6.468	
14,400.0	7,100.0	14,993.7	7,100.0	146.8	150.8	-90.00	-7,639.2	1,392.6	1,882.9	1,588.4	294.48	6.394	
14,500.0	7,100.0	15,093.6	7,100.0	148.7	152.6	-90.00	-7,739.2	1,392.4	1,885.9	1,587.6	298.30	6.322	
14,600.0	7,100.0	15,193.6	7,100.0	150.6	154.5	-90.00	-7,839.1	1,392.3	1,889.0	1,586.8	302.12	6.252	
14,700.0	7,100.0	15,293.5	7,100.0	152.5	156.4	-90.00	-7,939.1	1,392.1	1,892.0	1,586.1	305.95	6.184	
14,800.0	7,100.0	15,393.5	7,100.0	154.4	158.3	-90.00	-8,039.1	1,391.9	1,895.1	1,585.3	309.77	6.118	
14,900.0	7,100.0	15,493.4	7,100.0	156.3	160.2	-90.00	-8,139.0	1,391.7	1,898.1	1,584.5	313.60	6.053	
15,000.0	7,100.0	15,593.4	7,100.0	158.2	162.1	-90.00	-8,239.0	1,391.5	1,901.2	1,583.7	317.42	5.989	
15,100.0	7,100.0	15,693.3	7,100.0	160.1	164.0	-90.00	-8,338.9	1,391.4	1,904.2	1,583.0	321.25	5.928	
15,200.0	7,100.0	15,793.3	7,100.0	162.1	165.9	-90.00	-8,438.9	1,391.2	1,907.3	1,582.2	325.08	5.867	
15,300.0	7,100.0	15,893.2	7,100.0	164.0	167.8	-90.00	-8,538.8	1,391.0	1,910.3	1,581.4	328.91	5.808	
15,400.0	7,100.0	15,993.2	7,100.0	165.9	169.7	-90.00	-8,638.8	1,390.8	1,913.4	1,580.6	332.73	5.750	
15,500.0	7,100.0	16,093.2	7,100.0	167.8	171.6	-90.00	-8,738.7	1,390.7	1,916.4	1,579.9	336.56	5.694	
15,600.0	7,100.0	16,193.1	7,100.0	169.7	173.5	-90.00	-8,838.7	1,390.5	1,919.5	1,579.1	340.39	5.639	
15,700.0	7,100.0	16,293.1	7,100.0	171.6	175.4	-90.00	-8,938.6	1,390.3	1,922.5	1,578.3	344.22	5.585	
15,800.0	7,100.0	16,393.0	7,100.0	173.5	177.3	-90.00	-9,038.6	1,390.1	1,925.6	1,577.5	348.05	5.533	
15,900.0	7,100.0	16,493.0	7,100.0	175.4	179.2	-90.00	-9,138.5	1,390.0	1,928.6	1,576.8	351.88	5.481	
16,000.0	7,100.0	16,592.9	7,100.0	177.3	181.1	-90.00	-9,238.5	1,389.8	1,931.7	1,576.0	355.71	5.431	
16,100.0	7,100.0	16,692.9	7,100.0	179.2	183.0	-90.00	-9,338.4	1,389.6	1,934.7	1,575.2	359.54	5.381	
16,200.0	7,100.0	16,792.8	7,100.0	181.2	184.9	-90.00	-9,438.4	1,389.4	1,937.8	1,574.4	363.37	5.333	
16,300.0	7,100.0	16,892.8	7,100.0	183.1	186.8	-90.00	-9,538.3	1,389.2	1,940.9	1,573.7	367.20	5.286	
16,400.0	7,100.0	16,992.7	7,100.0	185.0	188.7	-90.00	-9,638.3	1,389.1	1,943.9	1,572.9	371.03	5.239	
16,500.0	7,100.0	17,092.7	7,100.0	186.9	190.6	-90.00	-9,738.3	1,388.9	1,947.0	1,572.1	374.87	5.194	
16,600.0	7,100.0	17,192.6	7,100.0	188.8	192.5	-90.00	-9,838.2	1,388.7	1,950.0	1,571.3	378.70	5.149	
16,700.0	7,100.0	17,292.6	7,100.0	190.7	194.4	-90.00	-9,938.2	1,388.5	1,953.1	1,570.5	382.53	5.106	
16,800.0	7,100.0	17,392.5	7,100.0	192.6	196.3	-90.00	-10,038.1	1,388.4	1,956.1	1,569.8	386.36	5.063	
16,900.0	7,100.0	17,492.5	7,100.0	194.5	198.2	-90.00	-10,138.1	1,388.2	1,959.2	1,569.0	390.20	5.021	
16,912.3	7,100.0	17,504.8	7,100.0	194.8	198.4	-90.00	-10,150.4	1,388.2	1,959.5	1,568.9	390.65	5.016	
16,913.0	7,100.0	17,505.5	7,100.0	194.8	198.4	-90.00	-10,151.1	1,388.2	1,959.6	1,568.9	390.67	5.016	SF

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 3-18H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.09	2.7	-170.0	170.0				
100.0	100.0	100.0	100.0	0.1	0.1	-89.09	2.7	-170.0	170.0	169.8	0.19	900.415	
200.0	200.0	200.0	200.0	0.3	0.3	-89.09	2.7	-170.0	170.0	169.4	0.64	266.320	
300.0	300.0	300.0	300.0	0.5	0.5	-89.09	2.7	-170.0	170.0	168.9	1.09	156.270	
400.0	400.0	400.0	400.0	0.8	0.8	-89.09	2.7	-170.0	170.0	168.5	1.54	110.577	
500.0	500.0	500.0	500.0	1.0	1.0	-89.09	2.7	-170.0	170.0	168.0	1.99	85.560	
600.0	600.0	600.0	600.0	1.2	1.2	54.54	2.7	-170.0	169.0	166.6	2.41	70.043	
673.0	672.9	672.9	672.9	1.3	1.4	55.54	2.7	-170.0	167.0	164.3	2.71	61.530	
700.0	699.8	699.8	699.8	1.4	1.4	56.01	2.7	-170.0	166.1	163.2	2.83	58.738	
800.0	799.7	799.7	799.7	1.6	1.7	57.77	2.7	-170.0	162.8	159.5	3.26	49.974	
900.0	899.5	899.5	899.5	1.8	1.9	59.60	2.7	-170.0	159.6	155.9	3.70	43.158	
1,000.0	999.3	999.3	999.3	2.0	2.1	61.50	2.7	-170.0	156.7	152.5	4.15	37.758	
1,100.0	1,099.1	1,099.1	1,099.1	2.3	2.3	63.47	2.7	-170.0	153.9	149.3	4.61	33.408	
1,200.0	1,198.9	1,198.9	1,198.9	2.5	2.6	65.51	2.7	-170.0	151.3	146.2	5.07	29.851	
1,300.0	1,298.8	1,298.8	1,298.8	2.8	2.8	67.62	2.7	-170.0	148.9	143.3	5.53	26.903	
1,328.4	1,327.1	1,327.1	1,327.1	2.8	2.9	68.24	2.7	-170.0	148.2	142.5	5.67	26.159	
1,400.0	1,398.6	1,398.6	1,398.6	3.0	3.0	69.45	2.7	-170.0	147.0	141.0	5.99	24.552	
1,501.4	1,500.0	1,500.0	1,500.0	3.2	3.2	-73.03	2.7	-170.0	146.4	140.0	6.31	23.202	
1,600.0	1,598.6	1,598.6	1,598.6	3.4	3.5	-73.03	2.7	-170.0	146.4	139.6	6.73	21.737	
1,700.0	1,698.6	1,698.6	1,698.6	3.6	3.7	-73.03	2.7	-170.0	146.4	139.2	7.16	20.433	
1,800.0	1,798.6	1,798.6	1,798.6	3.8	3.9	-73.03	2.7	-170.0	146.4	138.8	7.59	19.270	
1,900.0	1,898.6	1,898.6	1,898.6	4.0	4.1	-73.03	2.7	-170.0	146.4	138.3	8.03	18.228	
2,000.0	1,998.6	1,998.6	1,998.6	4.2	4.4	-73.03	2.7	-170.0	146.4	137.9	8.46	17.290	
2,100.0	2,098.6	2,098.6	2,098.6	4.4	4.6	-73.03	2.7	-170.0	146.4	137.4	8.90	16.441	
2,200.0	2,198.6	2,198.6	2,198.6	4.6	4.8	-73.03	2.7	-170.0	146.4	137.0	9.34	15.669	
2,300.0	2,298.6	2,298.6	2,298.6	4.8	5.0	-73.03	2.7	-170.0	146.4	136.6	9.78	14.965	
2,400.0	2,398.6	2,398.6	2,398.6	5.0	5.3	-73.03	2.7	-170.0	146.4	136.1	10.22	14.321	
2,500.0	2,498.6	2,498.6	2,498.6	5.2	5.5	-73.03	2.7	-170.0	146.4	135.7	10.66	13.728	
2,600.0	2,598.6	2,598.6	2,598.6	5.5	5.7	-73.03	2.7	-170.0	146.4	135.2	11.10	13.182	
2,700.0	2,698.6	2,698.6	2,698.6	5.7	5.9	-73.03	2.7	-170.0	146.4	134.8	11.54	12.677	
2,800.0	2,798.6	2,798.6	2,798.6	5.9	6.2	-73.03	2.7	-170.0	146.4	134.4	11.99	12.209	
2,900.0	2,898.6	2,898.6	2,898.6	6.1	6.4	-73.03	2.7	-170.0	146.4	133.9	12.43	11.773	
3,000.0	2,998.6	2,998.6	2,998.6	6.3	6.6	-73.03	2.7	-170.0	146.4	133.5	12.87	11.367	
3,100.0	3,098.6	3,098.6	3,098.6	6.5	6.8	-73.03	2.7	-170.0	146.4	133.0	13.32	10.988	
3,200.0	3,198.6	3,198.6	3,198.6	6.8	7.1	-73.03	2.7	-170.0	146.4	132.6	13.76	10.633	
3,300.0	3,298.6	3,298.6	3,298.6	7.0	7.3	-73.03	2.7	-170.0	146.4	132.1	14.21	10.300	CC, ES
3,400.0	3,398.6	3,393.8	3,393.8	7.2	7.5	-73.10	3.0	-171.5	148.0	133.3	14.63	10.111	
3,500.0	3,498.6	3,488.7	3,488.6	7.4	7.7	-73.29	3.9	-176.1	152.9	137.8	15.05	10.157	
3,600.0	3,598.6	3,583.2	3,582.8	7.6	7.9	-73.59	5.3	-183.7	161.0	145.6	15.47	10.411	
3,700.0	3,698.6	3,677.1	3,676.1	7.9	8.1	-73.95	7.3	-194.3	172.5	156.6	15.89	10.853	
3,800.0	3,798.6	3,770.2	3,768.1	8.1	8.3	-74.35	9.8	-207.8	187.2	170.8	16.33	11.463	
3,900.0	3,898.6	3,862.3	3,858.7	8.3	8.5	-74.77	12.8	-224.1	205.0	188.3	16.77	12.223	
4,000.0	3,998.6	3,953.3	3,947.6	8.5	8.8	-75.17	16.4	-242.9	226.0	208.8	17.24	13.115	
4,100.0	4,098.6	4,042.9	4,034.6	8.7	9.1	-75.54	20.4	-264.1	250.1	232.4	17.72	14.118	
4,200.0	4,198.6	4,131.1	4,119.5	9.0	9.3	-75.89	24.8	-287.6	277.2	259.0	18.21	15.218	
4,300.0	4,298.6	4,226.9	4,211.3	9.2	9.7	-76.21	29.8	-314.6	305.7	287.0	18.77	16.288	
4,400.0	4,398.6	4,322.8	4,303.2	9.4	10.1	-76.49	34.9	-341.5	334.3	314.9	19.34	17.279	
4,500.0	4,498.6	4,418.6	4,395.0	9.6	10.4	-76.71	39.9	-368.4	362.8	342.9	19.94	18.196	
4,600.0	4,598.6	4,514.4	4,486.8	9.8	10.9	-76.91	45.0	-395.3	391.4	370.8	20.55	19.044	
4,700.0	4,698.6	4,610.3	4,578.7	10.1	11.3	-77.08	50.0	-422.3	419.9	398.8	21.18	19.829	
4,800.0	4,798.6	4,706.1	4,670.5	10.3	11.7	-77.22	55.1	-449.2	448.5	426.7	21.82	20.556	
4,900.0	4,898.6	4,801.9	4,762.3	10.5	12.2	-77.35	60.1	-476.1	477.1	454.6	22.47	21.229	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 3-18H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.6	4,897.7	4,854.1	10.7	12.6	-77.47	65.2	-503.0	505.6	482.5	23.14	21.854	
5,100.0	5,098.6	4,993.6	4,946.0	10.9	13.1	-77.57	70.2	-529.9	534.2	510.4	23.81	22.434	
5,200.0	5,198.6	5,089.4	5,037.8	11.2	13.6	-77.66	75.2	-556.9	562.8	538.3	24.50	22.974	
5,300.0	5,298.6	5,185.2	5,129.6	11.4	14.1	-77.74	80.3	-583.8	591.3	566.2	25.19	23.477	
5,400.0	5,398.6	5,281.0	5,221.5	11.6	14.6	-77.82	85.3	-610.7	619.9	594.0	25.89	23.947	
5,500.7	5,499.3	5,377.5	5,313.9	11.8	15.1	-77.89	90.4	-637.8	648.7	622.1	26.60	24.388	
5,600.0	5,598.6	5,473.1	5,405.5	12.1	15.6	27.32	95.5	-664.7	675.6	651.4	24.23	27.884	
5,700.0	5,698.4	5,570.2	5,498.5	12.3	16.1	27.24	100.6	-691.9	699.7	675.0	24.68	28.349	
5,800.0	5,798.1	5,667.9	5,592.1	12.5	16.6	27.30	105.7	-719.4	720.8	695.7	25.13	28.681	
5,900.0	5,897.3	5,766.1	5,686.3	12.7	17.2	27.51	110.9	-747.0	738.9	713.3	25.58	28.886	
6,000.0	5,996.1	5,864.7	5,780.8	12.9	17.7	27.85	116.1	-774.7	754.0	727.9	26.03	28.968	
6,104.3	6,098.5	5,968.0	5,879.7	13.2	18.3	28.35	121.5	-803.7	766.5	740.0	26.49	28.930	
6,200.0	6,192.0	6,062.8	5,970.6	13.5	18.8	28.96	126.5	-830.3	776.5	749.6	26.98	28.781	
6,300.0	6,289.8	6,161.9	6,065.5	13.7	19.4	29.58	131.7	-858.1	787.1	759.6	27.50	28.624	
6,400.0	6,387.6	6,260.9	6,160.5	14.0	19.9	30.18	137.0	-886.0	797.8	769.8	28.03	28.467	
6,500.0	6,485.4	6,360.0	6,255.4	14.3	20.5	30.77	142.2	-913.8	808.6	780.0	28.56	28.310	
6,518.7	6,503.7	6,378.6	6,273.2	14.4	20.6	30.88	143.2	-919.0	810.6	782.0	28.66	28.281	
6,550.0	6,534.2	6,409.5	6,302.8	14.5	20.8	42.78	144.8	-927.7	814.1	785.3	28.83	28.240	
6,600.0	6,582.4	6,458.3	6,349.6	14.6	21.0	56.43	147.4	-941.4	820.3	791.2	29.10	28.189	
6,650.0	6,629.7	6,506.1	6,395.4	14.8	21.3	65.36	149.9	-954.8	827.1	797.7	29.38	28.150	
6,700.0	6,675.7	6,552.5	6,439.8	15.0	21.6	71.47	152.3	-967.9	834.8	805.2	29.68	28.126	
6,750.0	6,720.0	6,577.6	6,463.9	15.2	21.7	75.26	153.5	-975.2	844.0	814.1	29.91	28.215	
6,800.0	6,762.3	6,600.0	6,485.0	15.4	21.9	77.70	154.3	-982.5	855.5	825.4	30.15	28.376	
6,850.0	6,802.3	6,617.8	6,501.6	15.6	22.0	79.07	154.7	-988.8	869.3	839.0	30.39	28.607	
6,900.0	6,839.6	6,636.5	6,518.9	15.9	22.1	79.76	154.9	-996.0	885.4	854.7	30.66	28.880	
6,950.0	6,874.0	6,650.0	6,531.2	16.2	22.2	79.65	154.9	-1,001.5	903.6	872.6	30.93	29.212	
7,000.0	6,905.3	6,670.6	6,549.8	16.5	22.4	79.39	154.6	-1,010.5	923.7	892.5	31.27	29.540	
7,050.0	6,933.1	6,685.8	6,563.3	16.9	22.5	78.47	154.3	-1,017.5	945.8	914.2	31.61	29.920	
7,064.4	6,940.5	6,700.0	6,575.7	17.0	22.6	78.63	153.9	-1,024.3	952.6	920.9	31.76	29.991	
7,100.0	6,958.3	6,700.0	6,575.7	17.3	22.6	78.63	153.9	-1,024.3	969.6	937.6	32.05	30.254	
7,200.0	7,008.3	6,729.6	6,601.2	18.1	22.9	80.10	152.5	-1,039.4	1,021.7	988.6	33.09	30.874	
7,214.4	7,015.5	6,734.0	6,604.8	18.3	23.0	80.31	152.2	-1,041.7	1,029.7	996.4	33.25	30.965	
7,250.0	7,032.4	6,750.0	6,618.2	18.6	23.1	79.57	151.2	-1,050.5	1,050.0	1,016.4	33.55	31.295	
7,300.0	7,053.2	6,750.0	6,618.2	19.1	23.1	76.83	151.2	-1,050.5	1,080.4	1,046.5	33.85	31.915	
7,350.0	7,070.3	6,769.1	6,633.8	19.7	23.3	74.50	149.8	-1,061.4	1,112.5	1,078.3	34.24	32.493	
7,400.0	7,083.6	6,778.8	6,641.6	20.2	23.4	71.09	149.0	-1,067.2	1,146.2	1,111.8	34.50	33.229	
7,450.0	7,093.0	6,786.7	6,647.8	20.8	23.5	67.06	148.3	-1,071.9	1,181.3	1,146.7	34.62	34.125	
7,500.0	7,098.5	6,800.0	6,658.3	21.4	23.7	62.97	147.1	-1,080.1	1,217.3	1,182.7	34.65	35.131	
7,543.0	7,100.0	6,800.0	6,658.3	22.0	23.7	58.43	147.1	-1,080.1	1,248.8	1,214.4	34.40	36.302	
7,600.0	7,100.0	6,800.0	6,658.3	22.7	23.7	58.43	147.1	-1,080.1	1,291.4	1,256.4	35.05	36.844	
7,700.0	7,100.0	6,800.0	6,658.3	24.0	23.7	58.43	147.1	-1,080.1	1,368.7	1,332.5	36.24	37.769	
7,800.0	7,100.0	8,494.0	7,100.0	25.4	39.8	90.00	-1,037.3	-1,746.9	1,374.7	1,323.8	50.85	27.033	
7,900.0	7,100.0	8,594.0	7,100.0	26.9	40.6	90.00	-1,137.3	-1,746.9	1,373.8	1,320.0	53.76	25.554	
8,000.0	7,100.0	8,694.0	7,100.0	28.4	41.4	90.00	-1,237.3	-1,746.9	1,372.8	1,316.1	56.78	24.179	
8,100.0	7,100.0	8,794.0	7,100.0	30.0	42.3	90.00	-1,337.3	-1,746.9	1,371.9	1,312.0	59.89	22.906	
8,200.0	7,100.0	8,894.0	7,100.0	31.6	43.2	90.00	-1,437.3	-1,746.9	1,371.0	1,307.9	63.09	21.730	
8,300.0	7,100.0	8,994.0	7,100.0	33.2	44.2	90.00	-1,537.3	-1,747.0	1,370.1	1,303.7	66.36	20.646	
8,400.0	7,100.0	9,094.0	7,100.0	34.9	45.3	90.00	-1,637.2	-1,747.0	1,369.2	1,299.5	69.69	19.647	
8,500.0	7,100.0	9,194.0	7,100.0	36.6	46.5	90.00	-1,737.2	-1,747.0	1,368.3	1,295.2	73.07	18.726	
8,600.0	7,100.0	9,294.0	7,100.0	38.3	47.7	90.00	-1,837.2	-1,747.0	1,367.3	1,290.9	76.49	17.876	
8,700.0	7,100.0	9,394.0	7,100.0	40.1	48.9	90.00	-1,937.2	-1,747.0	1,366.4	1,286.5	79.96	17.090	
8,800.0	7,100.0	9,494.0	7,100.0	41.8	50.2	90.00	-2,037.2	-1,747.0	1,365.5	1,282.1	83.46	16.362	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 3-18H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,100.0	9,594.0	7,100.0	43.6	51.6	90.00	-2,137.2	-1,747.0	1,364.6	1,277.6	86.98	15.688	
9,000.0	7,100.0	9,694.0	7,100.0	45.4	53.0	90.00	-2,237.2	-1,747.0	1,363.7	1,273.1	90.54	15.061	
9,100.0	7,100.0	9,794.0	7,100.0	47.2	54.4	90.00	-2,337.2	-1,747.0	1,362.8	1,268.6	94.12	14.479	
9,200.0	7,100.0	9,894.0	7,100.0	49.0	55.9	90.00	-2,437.2	-1,747.0	1,361.8	1,264.1	97.72	13.936	
9,300.0	7,100.0	9,994.0	7,100.0	50.8	57.4	90.00	-2,537.2	-1,747.0	1,360.9	1,259.6	101.34	13.429	
9,400.0	7,100.0	10,094.0	7,100.0	52.6	58.9	90.00	-2,637.2	-1,747.0	1,360.0	1,255.0	104.98	12.955	
9,500.0	7,100.0	10,194.0	7,100.0	54.4	60.5	90.00	-2,737.2	-1,747.0	1,359.1	1,250.5	108.63	12.511	
9,600.0	7,100.0	10,294.0	7,100.0	56.3	62.0	90.00	-2,837.2	-1,747.0	1,358.2	1,245.9	112.30	12.095	
9,700.0	7,100.0	10,393.9	7,100.0	58.1	63.7	90.00	-2,937.2	-1,747.1	1,357.3	1,241.3	115.97	11.703	
9,800.0	7,100.0	10,493.9	7,100.0	59.9	65.3	90.00	-3,037.2	-1,747.1	1,356.4	1,236.7	119.66	11.335	
9,900.0	7,100.0	10,593.9	7,100.0	61.8	66.9	90.00	-3,137.2	-1,747.1	1,355.4	1,232.1	123.36	10.987	
10,000.0	7,100.0	10,693.9	7,100.0	63.7	68.6	90.00	-3,237.2	-1,747.1	1,354.5	1,227.4	127.07	10.659	
10,100.0	7,100.0	10,793.9	7,100.0	65.5	70.3	90.00	-3,337.2	-1,747.1	1,353.6	1,222.8	130.79	10.349	
10,200.0	7,100.0	10,893.9	7,100.0	67.4	72.0	90.00	-3,437.2	-1,747.1	1,352.7	1,218.2	134.52	10.056	
10,300.0	7,100.0	10,993.9	7,100.0	69.2	73.7	90.00	-3,537.2	-1,747.1	1,351.8	1,213.5	138.25	9.778	
10,400.0	7,100.0	11,093.9	7,100.0	71.1	75.4	90.00	-3,637.2	-1,747.1	1,350.9	1,208.9	141.99	9.514	
10,500.0	7,100.0	11,193.9	7,100.0	73.0	77.1	90.00	-3,737.2	-1,747.1	1,349.9	1,204.2	145.74	9.263	
10,600.0	7,100.0	11,293.9	7,100.0	74.9	78.9	90.00	-3,837.2	-1,747.1	1,349.0	1,199.5	149.49	9.024	
10,700.0	7,100.0	11,393.9	7,100.0	76.7	80.6	90.00	-3,937.1	-1,747.1	1,348.1	1,194.9	153.24	8.797	
10,800.0	7,100.0	11,493.9	7,100.0	78.6	82.4	90.00	-4,037.1	-1,747.1	1,347.2	1,190.2	157.01	8.580	
10,900.0	7,100.0	11,593.9	7,100.0	80.5	84.2	90.00	-4,137.1	-1,747.1	1,346.3	1,185.5	160.77	8.374	
11,000.0	7,100.0	11,693.9	7,100.0	82.4	85.9	90.00	-4,237.1	-1,747.1	1,345.4	1,180.8	164.54	8.176	
11,100.0	7,100.0	11,793.9	7,100.0	84.3	87.7	90.00	-4,337.1	-1,747.1	1,344.4	1,176.1	168.32	7.987	
11,200.0	7,100.0	11,893.9	7,100.0	86.2	89.5	90.00	-4,437.1	-1,747.2	1,343.5	1,171.4	172.10	7.807	
11,300.0	7,100.0	11,993.9	7,100.0	88.1	91.3	90.00	-4,537.1	-1,747.2	1,342.6	1,166.7	175.88	7.634	
11,400.0	7,100.0	12,093.9	7,100.0	90.0	93.1	90.00	-4,637.1	-1,747.2	1,341.7	1,162.0	179.66	7.468	
11,500.0	7,100.0	12,193.9	7,100.0	91.8	94.9	90.00	-4,737.1	-1,747.2	1,340.8	1,157.3	183.45	7.309	
11,600.0	7,100.0	12,281.8	7,100.0	93.7	96.7	90.00	-4,825.1	-1,747.2	1,339.9	1,152.9	187.02	7.165	
11,600.2	7,100.0	12,281.8	7,100.0	93.7	96.7	90.00	-4,825.1	-1,747.2	1,339.9	1,152.9	187.02	7.165	
11,700.0	7,100.0	12,281.8	7,100.0	95.6	96.7	90.00	-4,825.1	-1,747.2	1,343.6	1,154.7	188.92	7.112	
11,800.0	7,100.0	12,281.8	7,100.0	97.5	96.7	90.00	-4,825.1	-1,747.2	1,354.7	1,163.9	190.82	7.100 SF	
11,892.4	7,100.0	12,281.8	7,100.0	99.3	96.7	90.00	-4,825.1	-1,747.2	1,371.4	1,178.8	192.58	7.121	
11,900.0	7,100.0	12,281.8	7,100.0	99.4	96.7	90.00	-4,825.1	-1,747.2	1,373.0	1,180.2	192.79	7.122	
11,958.5	7,100.0	12,281.8	7,100.0	100.4	96.7	90.00	-4,825.1	-1,747.2	1,386.2	1,191.9	194.32	7.134	
12,000.0	7,100.0	12,281.8	7,100.0	101.1	96.7	90.00	-4,825.1	-1,747.2	1,396.6	1,201.6	195.05	7.160	
12,100.0	7,100.0	12,281.8	7,100.0	103.0	96.7	90.00	-4,825.1	-1,747.2	1,426.3	1,229.3	196.95	7.242	
12,200.0	7,100.0	12,281.8	7,100.0	104.9	96.7	90.00	-4,825.1	-1,747.2	1,462.2	1,263.4	198.85	7.353	
12,300.0	7,100.0	12,281.8	7,100.0	106.8	96.7	90.00	-4,825.1	-1,747.2	1,503.9	1,303.2	200.75	7.492	
12,400.0	7,100.0	12,281.8	7,100.0	108.7	96.7	90.00	-4,825.1	-1,747.2	1,551.0	1,348.3	202.65	7.654	
12,500.0	7,100.0	12,281.8	7,100.0	110.6	96.7	90.00	-4,825.1	-1,747.2	1,602.9	1,398.4	204.55	7.836	
12,600.0	7,100.0	12,281.8	7,100.0	112.5	96.7	90.00	-4,825.1	-1,747.2	1,659.2	1,452.8	206.45	8.037	
12,700.0	7,100.0	12,281.8	7,100.0	114.4	96.7	90.00	-4,825.1	-1,747.2	1,719.6	1,511.2	208.35	8.253	
12,800.0	7,100.0	12,281.8	7,100.0	116.3	96.7	90.00	-4,825.1	-1,747.2	1,783.4	1,573.2	210.25	8.482	
12,900.0	7,100.0	12,281.8	7,100.0	118.2	96.7	90.00	-4,825.1	-1,747.2	1,850.5	1,638.4	212.15	8.723	
13,000.0	7,100.0	12,281.8	7,100.0	120.1	96.7	90.00	-4,825.1	-1,747.2	1,920.4	1,706.4	214.05	8.972	
13,100.0	7,100.0	12,281.8	7,100.0	122.0	96.7	90.00	-4,825.1	-1,747.2	1,993.0	1,777.0	215.96	9.228	
13,200.0	7,100.0	12,281.8	7,100.0	123.9	96.7	90.00	-4,825.1	-1,747.2	2,067.8	1,849.9	217.86	9.491	
13,300.0	7,100.0	12,281.8	7,100.0	125.8	96.7	90.00	-4,825.1	-1,747.2	2,144.6	1,924.9	219.77	9.759	
13,400.0	7,100.0	12,281.8	7,100.0	127.7	96.7	90.00	-4,825.1	-1,747.2	2,223.3	2,001.6	221.67	10.030	
13,500.0	7,100.0	12,281.8	7,100.0	129.6	96.7	90.00	-4,825.1	-1,747.2	2,303.7	2,080.1	223.57	10.304	
13,600.0	7,100.0	12,281.8	7,100.0	131.5	96.7	90.00	-4,825.1	-1,747.2	2,385.5	2,160.0	225.48	10.580	
13,700.0	7,100.0	12,281.8	7,100.0	133.4	96.7	90.00	-4,825.1	-1,747.2	2,468.7	2,241.3	227.39	10.857	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 3-18H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,800.0	7,100.0	12,281.8	7,100.0	135.4	96.7	90.00	-4,825.1	-1,747.2	2,553.1	2,323.8	229.29	11.135	
13,900.0	7,100.0	12,281.8	7,100.0	137.3	96.7	90.00	-4,825.1	-1,747.2	2,638.5	2,407.3	231.20	11.412	
14,000.0	7,100.0	12,281.8	7,100.0	139.2	96.7	90.00	-4,825.1	-1,747.2	2,725.0	2,491.9	233.11	11.690	
14,100.0	7,100.0	12,281.8	7,100.0	141.1	96.7	90.00	-4,825.1	-1,747.2	2,812.4	2,577.4	235.01	11.967	
14,200.0	7,100.0	12,281.8	7,100.0	143.0	96.7	90.00	-4,825.1	-1,747.2	2,900.5	2,663.6	236.92	12.243	
14,300.0	7,100.0	12,281.8	7,100.0	144.9	96.7	90.00	-4,825.1	-1,747.2	2,989.5	2,750.6	238.83	12.517	
14,400.0	7,100.0	12,281.8	7,100.0	146.8	96.7	90.00	-4,825.1	-1,747.2	3,079.1	2,838.3	240.74	12.790	
14,500.0	7,100.0	12,281.8	7,100.0	148.7	96.7	90.00	-4,825.1	-1,747.2	3,169.3	2,926.7	242.64	13.062	
14,600.0	7,100.0	12,281.8	7,100.0	150.6	96.7	90.00	-4,825.1	-1,747.2	3,260.1	3,015.5	244.55	13.331	
14,700.0	7,100.0	12,281.8	7,100.0	152.5	96.7	90.00	-4,825.1	-1,747.2	3,351.4	3,105.0	246.46	13.598	
14,800.0	7,100.0	12,281.8	7,100.0	154.4	96.7	90.00	-4,825.1	-1,747.2	3,443.2	3,194.8	248.37	13.863	
14,900.0	7,100.0	12,281.8	7,100.0	156.3	96.7	90.00	-4,825.1	-1,747.2	3,535.5	3,285.2	250.28	14.126	
15,000.0	7,100.0	12,281.8	7,100.0	158.2	96.7	90.00	-4,825.1	-1,747.2	3,628.1	3,375.9	252.19	14.386	
15,100.0	7,100.0	12,281.8	7,100.0	160.1	96.7	90.00	-4,825.1	-1,747.2	3,721.2	3,467.1	254.10	14.645	
15,200.0	7,100.0	12,281.8	7,100.0	162.1	96.7	90.00	-4,825.1	-1,747.2	3,814.5	3,558.5	256.01	14.900	
15,300.0	7,100.0	12,281.8	7,100.0	164.0	96.7	90.00	-4,825.1	-1,747.2	3,908.3	3,650.3	257.92	15.153	
15,400.0	7,100.0	12,281.8	7,100.0	165.9	96.7	90.00	-4,825.1	-1,747.2	4,002.3	3,742.5	259.83	15.404	
15,500.0	7,100.0	12,281.8	7,100.0	167.8	96.7	90.00	-4,825.1	-1,747.2	4,096.6	3,834.8	261.74	15.651	
15,600.0	7,100.0	12,281.8	7,100.0	169.7	96.7	90.00	-4,825.1	-1,747.2	4,191.2	3,927.5	263.65	15.897	
15,700.0	7,100.0	12,281.8	7,100.0	171.6	96.7	90.00	-4,825.1	-1,747.2	4,286.0	4,020.4	265.56	16.139	
15,800.0	7,100.0	12,281.8	7,100.0	173.5	96.7	90.00	-4,825.1	-1,747.2	4,381.0	4,113.5	267.47	16.379	
15,900.0	7,100.0	12,281.8	7,100.0	175.4	96.7	90.00	-4,825.1	-1,747.2	4,476.3	4,206.9	269.38	16.617	
16,000.0	7,100.0	12,281.8	7,100.0	177.3	96.7	90.00	-4,825.1	-1,747.2	4,571.7	4,300.4	271.29	16.852	
16,100.0	7,100.0	12,281.8	7,100.0	179.2	96.7	90.00	-4,825.1	-1,747.2	4,667.4	4,394.2	273.21	17.084	
16,200.0	7,100.0	12,281.8	7,100.0	181.2	96.7	90.00	-4,825.1	-1,747.2	4,763.2	4,488.1	275.12	17.313	
16,300.0	7,100.0	12,281.8	7,100.0	183.1	96.7	90.00	-4,825.1	-1,747.2	4,859.2	4,582.2	277.03	17.540	
16,400.0	7,100.0	12,281.8	7,100.0	185.0	96.7	90.00	-4,825.1	-1,747.2	4,955.4	4,676.4	278.94	17.765	
16,500.0	7,100.0	12,281.8	7,100.0	186.9	96.7	90.00	-4,825.1	-1,747.2	5,051.7	4,770.8	280.85	17.987	
16,600.0	7,100.0	12,281.8	7,100.0	188.8	96.7	90.00	-4,825.1	-1,747.2	5,148.1	4,865.4	282.77	18.206	
16,700.0	7,100.0	12,281.8	7,100.0	190.7	96.7	90.00	-4,825.1	-1,747.2	5,244.7	4,960.0	284.68	18.423	
16,800.0	7,100.0	12,281.8	7,100.0	192.6	96.7	90.00	-4,825.1	-1,747.2	5,341.4	5,054.8	286.59	18.638	
16,900.0	7,100.0	12,281.8	7,100.0	194.5	96.7	90.00	-4,825.1	-1,747.2	5,438.3	5,149.7	288.50	18.850	
16,912.3	7,100.0	12,281.8	7,100.0	194.8	96.7	90.00	-4,825.1	-1,747.2	5,450.2	5,161.5	288.74	18.876	
16,913.0	7,100.0	12,281.8	7,100.0	194.8	96.7	90.00	-4,825.1	-1,747.2	5,450.8	5,162.1	288.75	18.877	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 4-18H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.05	0.3	-20.0	20.0				
100.0	100.0	100.0	100.0	0.1	0.1	-89.05	0.3	-20.0	20.0	19.8	0.19	105.945	
200.0	200.0	200.0	200.0	0.3	0.3	-89.05	0.3	-20.0	20.0	19.4	0.64	31.336	
300.0	300.0	300.0	300.0	0.5	0.5	-89.05	0.3	-20.0	20.0	18.9	1.09	18.387	
400.0	400.0	400.0	400.0	0.8	0.8	-89.05	0.3	-20.0	20.0	18.5	1.54	13.011	
500.0	500.0	500.0	500.0	1.0	1.0	-89.05	0.3	-20.0	20.0	18.0	1.99	10.067	CC, ES
600.0	600.0	599.3	599.3	1.2	1.2	57.86	0.3	-21.7	20.8	18.4	2.40	8.656	
673.0	672.9	672.3	672.2	1.3	1.4	65.18	0.3	-24.1	21.5	18.8	2.68	8.009	
700.0	699.8	699.2	699.2	1.4	1.4	68.59	0.3	-25.0	21.7	18.9	2.79	7.778	
800.0	799.7	799.1	799.0	1.6	1.6	80.36	0.3	-28.3	23.2	20.0	3.21	7.217	
900.0	899.5	899.0	898.8	1.8	1.8	90.35	0.3	-31.6	25.5	21.9	3.66	6.982	
1,000.0	999.3	998.9	998.6	2.0	2.1	98.48	0.3	-35.0	28.5	24.4	4.11	6.937	
1,100.0	1,099.1	1,098.8	1,098.5	2.3	2.3	104.98	0.3	-38.3	31.9	27.3	4.56	6.993	
1,200.0	1,198.9	1,198.6	1,198.3	2.5	2.5	110.17	0.3	-41.6	35.7	30.6	5.02	7.100	
1,300.0	1,298.8	1,298.5	1,298.1	2.8	2.7	114.34	0.3	-44.9	39.7	34.2	5.49	7.230	
1,328.4	1,327.1	1,326.9	1,326.5	2.8	2.8	115.37	0.3	-45.8	40.8	35.2	5.62	7.269	
1,400.0	1,398.6	1,398.4	1,398.0	3.0	3.0	116.74	0.3	-48.2	43.4	37.5	5.94	7.314	
1,501.4	1,500.0	1,500.5	1,500.0	3.2	3.2	-26.38	0.3	-50.0	45.0	38.8	6.26	7.190	
1,600.0	1,598.6	1,599.1	1,598.6	3.4	3.4	-26.38	0.3	-50.0	45.0	38.4	6.66	6.759	
1,700.0	1,698.6	1,699.1	1,698.6	3.6	3.6	-26.38	0.3	-50.0	45.0	37.9	7.07	6.365	
1,800.0	1,798.6	1,799.1	1,798.6	3.8	3.8	-26.38	0.3	-50.0	45.0	37.5	7.49	6.010	
1,900.0	1,898.6	1,899.1	1,898.6	4.0	4.0	-26.38	0.3	-50.0	45.0	37.1	7.91	5.691	
2,000.0	1,998.6	1,999.1	1,998.6	4.2	4.2	-26.38	0.3	-50.0	45.0	36.7	8.33	5.402	
2,100.0	2,098.6	2,099.1	2,098.6	4.4	4.5	-26.38	0.3	-50.0	45.0	36.3	8.76	5.139	
2,200.0	2,198.6	2,199.1	2,198.6	4.6	4.7	-26.38	0.3	-50.0	45.0	35.8	9.19	4.899	
2,300.0	2,298.6	2,299.1	2,298.6	4.8	4.9	-26.38	0.3	-50.0	45.0	35.4	9.62	4.680	
2,400.0	2,398.6	2,399.1	2,398.6	5.0	5.1	-26.38	0.3	-50.0	45.0	35.0	10.05	4.479	
2,500.0	2,498.6	2,499.1	2,498.6	5.2	5.3	-26.38	0.3	-50.0	45.0	34.5	10.48	4.294	
2,600.0	2,598.6	2,599.1	2,598.6	5.5	5.5	-26.38	0.3	-50.0	45.0	34.1	10.92	4.123	
2,700.0	2,698.6	2,699.1	2,698.6	5.7	5.8	-26.38	0.3	-50.0	45.0	33.7	11.36	3.964	
2,800.0	2,798.6	2,799.1	2,798.6	5.9	6.0	-26.38	0.3	-50.0	45.0	33.2	11.79	3.817	
2,900.0	2,898.6	2,899.1	2,898.6	6.1	6.2	-26.38	0.3	-50.0	45.0	32.8	12.23	3.681	
3,000.0	2,998.6	2,999.1	2,998.6	6.3	6.4	-26.38	0.3	-50.0	45.0	32.3	12.67	3.553	
3,100.0	3,098.6	3,099.1	3,098.6	6.5	6.6	-26.38	0.3	-50.0	45.0	31.9	13.11	3.434	
3,200.0	3,198.6	3,199.1	3,198.6	6.8	6.9	-26.38	0.3	-50.0	45.0	31.5	13.55	3.323	
3,300.0	3,298.6	3,299.1	3,298.6	7.0	7.1	-26.38	0.3	-50.0	45.0	31.0	13.99	3.218	
3,400.0	3,398.6	3,399.1	3,398.6	7.2	7.3	-26.38	0.3	-50.0	45.0	30.6	14.43	3.120	
3,500.0	3,498.6	3,499.1	3,498.6	7.4	7.5	-26.38	0.3	-50.0	45.0	30.1	14.87	3.027	
3,600.0	3,598.6	3,599.1	3,598.6	7.6	7.8	-26.38	0.3	-50.0	45.0	29.7	15.31	2.940	
3,700.0	3,698.6	3,699.1	3,698.6	7.9	8.0	-26.38	0.3	-50.0	45.0	29.3	15.76	2.857	
3,800.0	3,798.6	3,799.1	3,798.6	8.1	8.2	-26.38	0.3	-50.0	45.0	28.8	16.20	2.779	
3,900.0	3,898.6	3,899.1	3,898.6	8.3	8.4	-26.38	0.3	-50.0	45.0	28.4	16.64	2.705	
4,000.0	3,998.6	3,999.1	3,998.6	8.5	8.6	-26.38	0.3	-50.0	45.0	27.9	17.09	2.635	
4,100.0	4,098.6	4,099.1	4,098.6	8.7	8.9	-26.38	0.3	-50.0	45.0	27.5	17.53	2.568	
4,200.0	4,198.6	4,199.1	4,198.6	9.0	9.1	-26.38	0.3	-50.0	45.0	27.0	17.98	2.504	
4,300.0	4,298.6	4,299.1	4,298.6	9.2	9.3	-26.38	0.3	-50.0	45.0	26.6	18.42	2.444	
4,400.0	4,398.6	4,399.1	4,398.6	9.4	9.5	-26.38	0.3	-50.0	45.0	26.2	18.86	2.386	
4,500.0	4,498.6	4,498.5	4,498.1	9.6	9.7	-27.44	0.3	-50.9	45.4	26.1	19.30	2.355	SF
4,600.0	4,598.6	4,597.7	4,597.1	9.8	10.0	-32.00	0.3	-55.2	47.6	27.9	19.73	2.412	
4,700.0	4,698.6	4,696.4	4,695.5	10.1	10.2	-39.16	0.3	-62.8	52.1	31.9	20.16	2.584	
4,800.0	4,798.6	4,794.4	4,792.9	10.3	10.4	-47.35	0.3	-73.8	59.8	39.2	20.60	2.903	
4,900.0	4,898.6	4,891.6	4,889.1	10.5	10.6	-55.15	0.3	-87.9	71.2	50.2	21.05	3.384	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 4-18H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.6	4,987.7	4,983.7	10.7	10.9	-61.76	0.3	-105.1	86.5	65.0	21.51	4.023	
5,100.0	5,098.6	5,082.6	5,076.4	10.9	11.2	-67.03	0.3	-125.1	105.7	83.7	21.99	4.807	
5,200.0	5,198.6	5,176.0	5,167.0	11.2	11.4	-71.11	0.3	-147.9	128.5	106.1	22.49	5.716	
5,300.0	5,298.6	5,267.8	5,255.2	11.4	11.8	-74.26	0.3	-173.1	154.9	131.9	23.01	6.731	
5,400.0	5,398.6	5,357.9	5,341.0	11.6	12.1	-76.70	0.3	-200.6	184.5	160.9	23.55	7.834	
5,500.7	5,499.3	5,449.9	5,427.8	11.8	12.5	-78.66	0.3	-231.0	217.1	193.0	24.13	8.999	
5,600.0	5,598.6	5,544.0	5,516.4	12.1	12.9	25.20	0.3	-262.6	248.4	224.4	24.03	10.339	
5,700.0	5,698.4	5,639.7	5,606.7	12.3	13.3	24.23	0.3	-294.7	277.0	252.6	24.44	11.337	
5,800.0	5,798.1	5,736.4	5,697.7	12.5	13.8	23.70	0.3	-327.1	302.6	277.8	24.84	12.180	
5,900.0	5,897.3	5,833.8	5,789.5	12.7	14.3	23.50	0.3	-359.7	325.1	299.8	25.25	12.873	
6,000.0	5,996.1	5,931.9	5,882.0	12.9	14.8	23.57	0.3	-392.6	344.4	318.7	25.66	13.421	
6,104.3	6,098.5	6,034.9	5,978.9	13.2	15.3	23.89	0.3	-427.1	361.2	335.1	26.09	13.844	
6,200.0	6,192.0	6,129.5	6,068.1	13.5	15.9	24.38	0.3	-458.8	375.1	348.5	26.56	14.122	
6,300.0	6,289.8	6,228.3	6,161.3	13.7	16.4	24.86	0.3	-491.9	389.6	362.5	27.06	14.397	
6,400.0	6,387.6	6,327.2	6,254.4	14.0	17.0	25.30	0.3	-525.1	404.2	376.6	27.57	14.658	
6,500.0	6,485.4	6,426.1	6,347.6	14.3	17.6	25.71	0.3	-558.2	418.7	390.6	28.09	14.905	
6,518.7	6,503.7	6,444.6	6,365.0	14.4	17.7	25.78	0.3	-564.4	421.5	393.3	28.19	14.950	
6,550.0	6,534.2	6,475.5	6,394.1	14.5	17.9	37.57	0.3	-574.8	426.1	397.7	28.35	15.031	
6,600.0	6,582.4	6,524.5	6,440.3	14.6	18.2	51.29	0.3	-591.2	433.6	405.0	28.61	15.157	
6,650.0	6,629.7	6,572.8	6,485.8	14.8	18.5	60.57	0.3	-607.4	441.5	412.6	28.91	15.274	
6,700.0	6,675.7	6,618.2	6,528.5	15.0	18.7	67.20	0.3	-622.6	450.1	420.8	29.23	15.396	
6,750.0	6,720.0	6,656.3	6,564.1	15.2	19.0	71.79	-1.2	-636.3	460.0	430.4	29.55	15.568	
6,800.0	6,762.3	6,694.7	6,599.2	15.4	19.2	75.16	-4.9	-651.2	471.6	441.7	29.88	15.782	
6,850.0	6,802.3	6,733.2	6,633.7	15.6	19.5	77.66	-10.8	-667.3	484.9	454.6	30.25	16.031	
6,900.0	6,839.6	6,772.0	6,667.5	15.9	19.8	79.52	-18.9	-684.7	499.7	469.1	30.64	16.309	
6,950.0	6,874.0	6,811.1	6,700.3	16.2	20.1	80.88	-29.2	-703.2	516.1	485.0	31.07	16.611	
7,000.0	6,905.3	6,850.0	6,731.7	16.5	20.4	81.80	-41.6	-722.5	533.8	502.3	31.53	16.931	
7,050.0	6,933.1	6,890.6	6,762.9	16.9	20.7	82.44	-56.7	-743.6	552.8	520.8	32.04	17.254	
7,064.4	6,940.5	6,902.3	6,771.6	17.0	20.8	82.56	-61.4	-749.8	558.5	526.3	32.19	17.349	
7,100.0	6,958.3	6,931.6	6,792.8	17.3	21.1	83.84	-74.1	-765.7	572.9	540.2	32.71	17.516	
7,200.0	7,008.3	7,020.5	6,850.6	18.1	22.0	86.50	-119.0	-815.9	614.3	580.0	34.29	17.915	
7,214.4	7,015.5	7,034.0	6,858.5	18.3	22.2	86.75	-126.6	-823.7	620.4	585.8	34.54	17.963	
7,250.0	7,032.4	7,067.3	6,876.9	18.6	22.5	86.64	-146.3	-843.3	635.6	600.7	34.90	18.211	
7,300.0	7,053.2	7,112.4	6,899.9	19.1	23.0	86.09	-174.5	-870.0	658.2	622.7	35.42	18.580	
7,350.0	7,070.3	7,154.7	6,921.0	19.7	23.6	85.33	-201.1	-895.2	682.3	646.3	35.96	18.971	
7,400.0	7,083.6	7,195.1	6,941.2	20.2	24.1	84.37	-226.6	-919.1	707.9	671.4	36.51	19.389	
7,450.0	7,093.0	7,233.2	6,960.3	20.8	24.5	83.17	-250.6	-941.8	735.0	697.9	37.07	19.825	
7,500.0	7,098.5	7,787.0	7,100.0	21.4	29.7	89.96	-737.5	-1,107.7	738.9	696.3	42.52	17.378	
7,543.0	7,100.0	7,829.9	7,100.0	22.0	30.0	90.00	-780.4	-1,107.7	737.8	694.8	43.08	17.129	
7,600.0	7,100.0	7,886.9	7,100.0	22.7	30.5	90.00	-837.4	-1,107.7	737.3	692.8	44.50	16.569	
7,700.0	7,100.0	7,986.9	7,100.0	24.0	31.3	90.00	-937.4	-1,107.7	736.4	689.2	47.14	15.622	
7,800.0	7,100.0	8,086.9	7,100.0	25.4	32.3	90.00	-1,037.4	-1,107.7	735.4	685.5	49.94	14.728	
7,900.0	7,100.0	8,186.9	7,100.0	26.9	33.3	90.00	-1,137.4	-1,107.7	734.5	681.7	52.87	13.894	
8,000.0	7,100.0	8,286.9	7,100.0	28.4	34.5	90.00	-1,237.4	-1,107.7	733.6	677.7	55.91	13.121	
8,100.0	7,100.0	8,386.9	7,100.0	30.0	35.7	90.00	-1,337.4	-1,107.7	732.7	673.6	59.05	12.408	
8,200.0	7,100.0	8,486.9	7,100.0	31.6	36.9	90.00	-1,437.4	-1,107.7	731.7	669.5	62.27	11.752	
8,300.0	7,100.0	8,586.9	7,100.0	33.2	38.2	90.00	-1,537.4	-1,107.7	730.8	665.2	65.55	11.148	
8,400.0	7,100.0	8,686.9	7,100.0	34.9	39.6	90.00	-1,637.4	-1,107.7	729.9	661.0	68.90	10.593	
8,500.0	7,100.0	8,786.9	7,100.0	36.6	41.0	90.00	-1,737.4	-1,107.6	728.9	656.6	72.30	10.082	
8,600.0	7,100.0	8,886.9	7,100.0	38.3	42.4	90.00	-1,837.4	-1,107.6	728.0	652.3	75.74	9.612	
8,700.0	7,100.0	8,986.9	7,100.0	40.1	43.9	90.00	-1,937.4	-1,107.6	727.1	647.9	79.22	9.178	
8,800.0	7,100.0	9,086.9	7,100.0	41.8	45.5	90.00	-2,037.4	-1,107.6	726.2	643.4	82.74	8.777	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 4-18H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,100.0	9,186.9	7,100.0	43.6	47.0	90.00	-2,137.4	-1,107.6	725.2	638.9	86.28	8.405	
9,000.0	7,100.0	9,286.9	7,100.0	45.4	48.6	90.00	-2,237.4	-1,107.6	724.3	634.4	89.85	8.061	
9,100.0	7,100.0	9,386.8	7,100.0	47.2	50.2	90.00	-2,337.4	-1,107.6	723.4	629.9	93.44	7.741	
9,200.0	7,100.0	9,486.8	7,100.0	49.0	51.9	90.00	-2,437.4	-1,107.6	722.4	625.4	97.05	7.444	
9,300.0	7,100.0	9,586.8	7,100.0	50.8	53.5	90.00	-2,537.3	-1,107.6	721.5	620.8	100.69	7.166	
9,400.0	7,100.0	9,686.8	7,100.0	52.6	55.2	90.00	-2,637.3	-1,107.6	720.6	616.2	104.33	6.907	
9,500.0	7,100.0	9,786.8	7,100.0	54.4	56.9	90.00	-2,737.3	-1,107.6	719.6	611.7	107.99	6.664	
9,600.0	7,100.0	9,886.8	7,100.0	56.3	58.6	90.00	-2,837.3	-1,107.6	718.7	607.0	111.67	6.436	
9,700.0	7,100.0	9,986.8	7,100.0	58.1	60.4	90.00	-2,937.3	-1,107.6	717.8	602.4	115.36	6.222	
9,800.0	7,100.0	10,086.8	7,100.0	59.9	62.1	90.00	-3,037.3	-1,107.6	716.9	597.8	119.05	6.021	
9,900.0	7,100.0	10,186.8	7,100.0	61.8	63.9	90.00	-3,137.3	-1,107.6	715.9	593.2	122.76	5.832	
10,000.0	7,100.0	10,286.8	7,100.0	63.7	65.6	90.00	-3,237.3	-1,107.6	715.0	588.5	126.48	5.653	
10,100.0	7,100.0	10,386.8	7,100.0	65.5	67.4	90.00	-3,337.3	-1,107.5	714.1	583.9	130.20	5.484	
10,200.0	7,100.0	10,486.8	7,100.0	67.4	69.2	90.00	-3,437.3	-1,107.5	713.1	579.2	133.94	5.324	
10,300.0	7,100.0	10,586.8	7,100.0	69.2	71.0	90.00	-3,537.3	-1,107.5	712.2	574.5	137.68	5.173	
10,400.0	7,100.0	10,686.8	7,100.0	71.1	72.8	90.00	-3,637.3	-1,107.5	711.3	569.9	141.42	5.029	
10,500.0	7,100.0	10,786.8	7,100.0	73.0	74.6	90.00	-3,737.3	-1,107.5	710.4	565.2	145.18	4.893	
10,600.0	7,100.0	10,886.8	7,100.0	74.9	76.4	90.00	-3,837.3	-1,107.5	709.4	560.5	148.93	4.763	
10,700.0	7,100.0	10,986.8	7,100.0	76.7	78.2	90.00	-3,937.3	-1,107.5	708.5	555.8	152.69	4.640	
10,800.0	7,100.0	11,086.8	7,100.0	78.6	80.0	90.00	-4,037.3	-1,107.5	707.6	551.1	156.46	4.522	
10,900.0	7,100.0	11,186.8	7,100.0	80.5	81.8	90.00	-4,137.3	-1,107.5	706.6	546.4	160.23	4.410	
11,000.0	7,100.0	11,286.8	7,100.0	82.4	83.7	90.00	-4,237.3	-1,107.5	705.7	541.7	164.01	4.303	
11,100.0	7,100.0	11,386.8	7,100.0	84.3	85.5	90.00	-4,337.3	-1,107.5	704.8	537.0	167.79	4.200	
11,200.0	7,100.0	11,486.8	7,100.0	86.2	87.4	90.00	-4,437.3	-1,107.5	703.8	532.3	171.57	4.102	
11,300.0	7,100.0	11,586.8	7,100.0	88.1	89.2	90.00	-4,537.3	-1,107.5	702.9	527.6	175.36	4.008	
11,400.0	7,100.0	11,686.7	7,100.0	90.0	91.1	90.00	-4,637.3	-1,107.5	702.0	522.8	179.15	3.919	
11,500.0	7,100.0	11,786.7	7,100.0	91.8	92.9	90.00	-4,737.3	-1,107.5	701.1	518.1	182.94	3.832	
11,595.9	7,100.0	11,877.2	7,100.0	93.7	94.6	90.00	-4,827.7	-1,107.4	700.2	513.7	186.47	3.755	
11,600.0	7,100.0	11,877.2	7,100.0	93.7	94.6	90.00	-4,827.7	-1,107.4	700.2	513.6	186.55	3.753	
11,700.0	7,100.0	11,877.2	7,100.0	95.6	94.6	90.00	-4,827.7	-1,107.4	707.7	519.3	188.45	3.755	
11,800.0	7,100.0	11,877.2	7,100.0	97.5	94.6	90.00	-4,827.7	-1,107.4	729.0	538.7	190.35	3.830	
11,892.4	7,100.0	11,877.2	7,100.0	99.3	94.6	90.00	-4,827.7	-1,107.4	759.9	567.8	192.11	3.956	
11,900.0	7,100.0	11,877.2	7,100.0	99.4	94.6	90.00	-4,827.7	-1,107.4	762.9	570.6	192.31	3.967	
11,958.5	7,100.0	11,877.2	7,100.0	100.4	94.6	90.00	-4,827.7	-1,107.4	787.3	593.6	193.70	4.065	
12,000.0	7,100.0	11,877.2	7,100.0	101.1	94.6	90.00	-4,827.7	-1,107.4	806.4	612.0	194.44	4.147	
12,100.0	7,100.0	11,877.2	7,100.0	103.0	94.6	90.00	-4,827.7	-1,107.4	858.9	662.5	196.33	4.374	
12,200.0	7,100.0	11,877.2	7,100.0	104.9	94.6	90.00	-4,827.7	-1,107.4	919.2	721.0	198.23	4.637	
12,300.0	7,100.0	11,877.2	7,100.0	106.8	94.6	90.00	-4,827.7	-1,107.4	986.1	785.9	200.13	4.927	
12,400.0	7,100.0	11,877.2	7,100.0	108.7	94.6	90.00	-4,827.7	-1,107.4	1,058.2	856.1	202.03	5.238	
12,500.0	7,100.0	11,877.2	7,100.0	110.6	94.6	90.00	-4,827.7	-1,107.4	1,134.5	930.6	203.93	5.563	
12,600.0	7,100.0	11,877.2	7,100.0	112.5	94.6	90.00	-4,827.7	-1,107.4	1,214.3	1,008.4	205.83	5.899	
12,700.0	7,100.0	11,877.2	7,100.0	114.4	94.6	90.00	-4,827.7	-1,107.4	1,296.8	1,089.1	207.73	6.243	
12,800.0	7,100.0	11,877.2	7,100.0	116.3	94.6	90.00	-4,827.7	-1,107.4	1,381.7	1,172.1	209.63	6.591	
12,900.0	7,100.0	11,877.2	7,100.0	118.2	94.6	90.00	-4,827.7	-1,107.4	1,468.5	1,257.0	211.53	6.942	
13,000.0	7,100.0	11,877.2	7,100.0	120.1	94.6	90.00	-4,827.7	-1,107.4	1,556.9	1,343.4	213.44	7.294	
13,100.0	7,100.0	11,877.2	7,100.0	122.0	94.6	90.00	-4,827.7	-1,107.4	1,646.6	1,431.2	215.34	7.646	
13,200.0	7,100.0	11,877.2	7,100.0	123.9	94.6	90.00	-4,827.7	-1,107.4	1,737.4	1,520.2	217.24	7.997	
13,300.0	7,100.0	11,877.2	7,100.0	125.8	94.6	90.00	-4,827.7	-1,107.4	1,829.2	1,610.0	219.15	8.347	
13,400.0	7,100.0	11,877.2	7,100.0	127.7	94.6	90.00	-4,827.7	-1,107.4	1,921.8	1,700.7	221.05	8.694	
13,500.0	7,100.0	11,877.2	7,100.0	129.6	94.6	90.00	-4,827.7	-1,107.4	2,015.1	1,792.1	222.96	9.038	
13,600.0	7,100.0	11,877.2	7,100.0	131.5	94.6	90.00	-4,827.7	-1,107.4	2,109.0	1,884.2	224.86	9.379	
13,700.0	7,100.0	11,877.2	7,100.0	133.4	94.6	90.00	-4,827.7	-1,107.4	2,203.5	1,976.7	226.77	9.717	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 4-18H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,800.0	7,100.0	11,877.2	7,100.0	135.4	94.6	90.00	-4,827.7	-1,107.4	2,298.4	2,069.7	228.67	10.051	
13,900.0	7,100.0	11,877.2	7,100.0	137.3	94.6	90.00	-4,827.7	-1,107.4	2,393.8	2,163.2	230.58	10.381	
14,000.0	7,100.0	11,877.2	7,100.0	139.2	94.6	90.00	-4,827.7	-1,107.4	2,489.5	2,257.0	232.49	10.708	
14,100.0	7,100.0	11,877.2	7,100.0	141.1	94.6	90.00	-4,827.7	-1,107.4	2,585.5	2,351.1	234.40	11.031	
14,200.0	7,100.0	11,877.2	7,100.0	143.0	94.6	90.00	-4,827.7	-1,107.4	2,681.8	2,445.5	236.30	11.349	
14,300.0	7,100.0	11,877.2	7,100.0	144.9	94.6	90.00	-4,827.7	-1,107.4	2,778.4	2,540.2	238.21	11.664	
14,400.0	7,100.0	11,877.2	7,100.0	146.8	94.6	90.00	-4,827.7	-1,107.4	2,875.2	2,635.1	240.12	11.974	
14,500.0	7,100.0	11,877.2	7,100.0	148.7	94.6	90.00	-4,827.7	-1,107.4	2,972.2	2,730.2	242.03	12.281	
14,600.0	7,100.0	11,877.2	7,100.0	150.6	94.6	90.00	-4,827.7	-1,107.4	3,069.5	2,825.5	243.94	12.583	
14,700.0	7,100.0	11,877.2	7,100.0	152.5	94.6	90.00	-4,827.7	-1,107.4	3,166.9	2,921.0	245.84	12.882	
14,800.0	7,100.0	11,877.2	7,100.0	154.4	94.6	90.00	-4,827.7	-1,107.4	3,264.4	3,016.6	247.75	13.176	
14,900.0	7,100.0	11,877.2	7,100.0	156.3	94.6	90.00	-4,827.7	-1,107.4	3,362.1	3,112.4	249.66	13.467	
15,000.0	7,100.0	11,877.2	7,100.0	158.2	94.6	90.00	-4,827.7	-1,107.4	3,459.9	3,208.3	251.57	13.753	
15,100.0	7,100.0	11,877.2	7,100.0	160.1	94.6	90.00	-4,827.7	-1,107.4	3,557.9	3,304.4	253.48	14.036	
15,200.0	7,100.0	11,877.2	7,100.0	162.1	94.6	90.00	-4,827.7	-1,107.4	3,655.9	3,400.5	255.39	14.315	
15,300.0	7,100.0	11,877.2	7,100.0	164.0	94.6	90.00	-4,827.7	-1,107.4	3,754.1	3,496.8	257.30	14.590	
15,400.0	7,100.0	11,877.2	7,100.0	165.9	94.6	90.00	-4,827.7	-1,107.4	3,852.3	3,593.1	259.21	14.862	
15,500.0	7,100.0	11,877.2	7,100.0	167.8	94.6	90.00	-4,827.7	-1,107.4	3,950.7	3,689.6	261.12	15.130	
15,600.0	7,100.0	11,877.2	7,100.0	169.7	94.6	90.00	-4,827.7	-1,107.4	4,049.1	3,786.1	263.03	15.394	
15,700.0	7,100.0	11,877.2	7,100.0	171.6	94.6	90.00	-4,827.7	-1,107.4	4,147.6	3,882.7	264.94	15.655	
15,800.0	7,100.0	11,877.2	7,100.0	173.5	94.6	90.00	-4,827.7	-1,107.4	4,246.2	3,979.3	266.86	15.912	
15,900.0	7,100.0	11,877.2	7,100.0	175.4	94.6	90.00	-4,827.7	-1,107.4	4,344.8	4,076.0	268.77	16.166	
16,000.0	7,100.0	11,877.2	7,100.0	177.3	94.6	90.00	-4,827.7	-1,107.4	4,443.5	4,172.8	270.68	16.416	
16,100.0	7,100.0	11,877.2	7,100.0	179.2	94.6	90.00	-4,827.7	-1,107.4	4,542.2	4,269.7	272.59	16.663	
16,200.0	7,100.0	11,877.2	7,100.0	181.2	94.6	90.00	-4,827.7	-1,107.4	4,641.0	4,366.5	274.50	16.907	
16,300.0	7,100.0	11,877.2	7,100.0	183.1	94.6	90.00	-4,827.7	-1,107.4	4,739.9	4,463.5	276.41	17.148	
16,400.0	7,100.0	11,877.2	7,100.0	185.0	94.6	90.00	-4,827.7	-1,107.4	4,838.8	4,560.5	278.32	17.385	
16,500.0	7,100.0	11,877.2	7,100.0	186.9	94.6	90.00	-4,827.7	-1,107.4	4,937.8	4,657.5	280.24	17.620	
16,600.0	7,100.0	11,877.2	7,100.0	188.8	94.6	90.00	-4,827.7	-1,107.4	5,036.7	4,754.6	282.15	17.851	
16,700.0	7,100.0	11,877.2	7,100.0	190.7	94.6	90.00	-4,827.7	-1,107.4	5,135.8	4,851.7	284.06	18.080	
16,800.0	7,100.0	11,877.2	7,100.0	192.6	94.6	90.00	-4,827.7	-1,107.4	5,234.8	4,948.9	285.97	18.305	
16,900.0	7,100.0	11,877.2	7,100.0	194.5	94.6	90.00	-4,827.7	-1,107.4	5,333.9	5,046.0	287.89	18.528	
16,912.3	7,100.0	11,877.2	7,100.0	194.8	94.6	90.00	-4,827.7	-1,107.4	5,346.2	5,058.1	288.12	18.555	
16,913.0	7,100.0	11,877.2	7,100.0	194.8	94.6	90.00	-4,827.7	-1,107.4	5,346.8	5,058.7	288.13	18.557	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 4-7H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-47.71	152.3	-167.4	226.3				
100.0	100.0	103.0	103.0	0.1	0.1	-47.71	152.3	-167.4	226.3	226.1	0.19	1,177.628	
200.0	200.0	203.0	203.0	0.3	0.3	-47.71	152.3	-167.4	226.3	225.7	0.64	352.670	
300.0	300.0	303.0	303.0	0.5	0.5	-47.71	152.3	-167.4	226.3	225.2	1.09	207.389	
400.0	400.0	403.0	403.0	0.8	0.8	-47.71	152.3	-167.4	226.3	224.8	1.54	146.881	
500.0	500.0	503.0	503.0	1.0	1.0	-47.71	152.3	-167.4	226.3	224.3	1.99	113.707	CC
600.0	600.0	603.0	603.0	1.2	1.2	95.86	152.3	-167.4	226.5	224.1	2.42	93.763	
673.0	672.9	675.9	675.9	1.3	1.4	96.72	152.3	-167.4	226.9	224.1	2.72	83.485	
700.0	699.8	702.8	702.8	1.4	1.4	97.13	152.3	-167.4	227.1	224.2	2.83	80.179	
800.0	799.7	802.7	802.7	1.6	1.7	98.64	152.3	-167.4	227.9	224.6	3.27	69.778	
900.0	899.5	902.5	902.5	1.8	1.9	100.13	152.3	-167.4	228.9	225.2	3.71	61.670	
1,000.0	999.3	1,002.3	1,002.3	2.0	2.1	101.60	152.3	-167.4	230.0	225.9	4.16	55.239	
1,100.0	1,099.1	1,102.1	1,102.1	2.3	2.3	103.07	152.3	-167.4	231.3	226.7	4.62	50.048	
1,200.0	1,198.9	1,201.9	1,201.9	2.5	2.6	104.51	152.3	-167.4	232.7	227.7	5.08	45.793	
1,300.0	1,298.8	1,301.8	1,301.8	2.8	2.8	105.94	152.3	-167.4	234.3	228.8	5.55	42.255	
1,328.4	1,327.1	1,330.1	1,330.1	2.8	2.9	106.34	152.3	-167.4	234.8	229.1	5.68	41.358	
1,400.0	1,398.6	1,401.6	1,401.6	3.0	3.0	107.16	152.3	-167.4	235.8	229.8	6.00	39.330	
1,501.4	1,500.0	1,503.0	1,503.0	3.2	3.2	-35.55	152.3	-167.4	236.3	230.0	6.35	37.230	
1,600.0	1,598.6	1,601.6	1,601.6	3.4	3.5	-35.55	152.3	-167.4	236.3	229.6	6.77	34.905	
1,700.0	1,698.6	1,701.6	1,701.6	3.6	3.7	-35.55	152.3	-167.4	236.3	229.1	7.20	32.836	
1,800.0	1,798.6	1,801.6	1,801.6	3.8	3.9	-35.55	152.3	-167.4	236.3	228.7	7.63	30.988	
1,900.0	1,898.6	1,901.6	1,901.6	4.0	4.1	-35.55	152.3	-167.4	236.3	228.3	8.06	29.329	
2,000.0	1,998.6	2,001.6	2,001.6	4.2	4.4	-35.55	152.3	-167.4	236.3	227.8	8.49	27.832	
2,100.0	2,098.6	2,101.6	2,101.6	4.4	4.6	-35.55	152.3	-167.4	236.3	227.4	8.93	26.475	
2,200.0	2,198.6	2,201.6	2,201.6	4.6	4.8	-35.55	152.3	-167.4	236.3	227.0	9.36	25.242	
2,300.0	2,298.6	2,301.6	2,301.6	4.8	5.0	-35.55	152.3	-167.4	236.3	226.5	9.80	24.114	
2,400.0	2,398.6	2,401.6	2,401.6	5.0	5.3	-35.55	152.3	-167.4	236.3	226.1	10.24	23.081	
2,500.0	2,498.6	2,501.6	2,501.6	5.2	5.5	-35.55	152.3	-167.4	236.3	225.7	10.68	22.131	
2,600.0	2,598.6	2,601.6	2,601.6	5.5	5.7	-35.55	152.3	-167.4	236.3	225.2	11.12	21.255	
2,700.0	2,698.6	2,701.6	2,701.6	5.7	5.9	-35.55	152.3	-167.4	236.3	224.8	11.56	20.444	
2,800.0	2,798.6	2,801.6	2,801.6	5.9	6.2	-35.55	152.3	-167.4	236.3	224.3	12.00	19.691	
2,900.0	2,898.6	2,901.6	2,901.6	6.1	6.4	-35.55	152.3	-167.4	236.3	223.9	12.44	18.991	
3,000.0	2,998.6	3,001.6	3,001.6	6.3	6.6	-35.55	152.3	-167.4	236.3	223.5	12.89	18.339	
3,100.0	3,098.6	3,101.6	3,101.6	6.5	6.8	-35.55	152.3	-167.4	236.3	223.0	13.33	17.729	
3,200.0	3,198.6	3,201.6	3,201.6	6.8	7.1	-35.55	152.3	-167.4	236.3	222.6	13.77	17.158	
3,300.0	3,298.6	3,301.6	3,301.6	7.0	7.3	-35.55	152.3	-167.4	236.3	222.1	14.22	16.622	
3,400.0	3,398.6	3,401.6	3,401.6	7.2	7.5	-35.55	152.3	-167.4	236.3	221.7	14.66	16.118	
3,466.1	3,464.7	3,467.7	3,467.7	7.3	7.7	-35.55	152.3	-167.4	236.3	221.4	14.96	15.801	
3,500.0	3,498.6	3,500.0	3,500.0	7.4	7.7	-35.55	152.3	-167.4	236.3	221.2	15.10	15.648	ES
3,600.0	3,598.6	3,598.2	3,598.1	7.6	7.9	-35.92	152.0	-169.1	237.1	221.5	15.53	15.268	
3,700.0	3,698.6	3,694.5	3,694.4	7.9	8.1	-36.98	151.1	-173.9	239.3	223.4	15.93	15.018	
3,800.0	3,798.6	3,790.5	3,790.0	8.1	8.3	-38.70	149.6	-181.9	243.2	226.8	16.34	14.881	
3,900.0	3,898.6	3,885.8	3,884.6	8.3	8.5	-40.99	147.5	-192.9	248.9	232.2	16.75	14.862	SF
4,000.0	3,998.6	3,980.3	3,978.0	8.5	8.7	-43.74	144.8	-206.9	256.9	239.7	17.16	14.970	
4,100.0	4,098.6	4,073.7	4,069.8	8.7	9.0	-46.83	141.6	-223.6	267.4	249.8	17.58	15.214	
4,200.0	4,198.6	4,165.9	4,159.9	9.0	9.2	-50.13	138.0	-243.1	280.7	262.7	18.00	15.599	
4,300.0	4,298.6	4,256.7	4,247.9	9.2	9.5	-53.52	133.8	-265.0	297.2	278.8	18.43	16.125	
4,400.0	4,398.6	4,345.9	4,333.7	9.4	9.8	-56.86	129.2	-289.2	316.9	298.1	18.88	16.787	
4,500.0	4,498.6	4,436.1	4,419.6	9.6	10.1	-60.17	124.1	-316.2	340.0	320.6	19.35	17.564	
4,600.0	4,598.6	4,531.1	4,509.9	9.8	10.5	-63.29	118.6	-345.2	364.6	344.7	19.87	18.350	
4,700.0	4,698.6	4,626.2	4,600.2	10.1	10.9	-66.02	113.1	-374.3	390.2	369.8	20.41	19.117	
4,800.0	4,798.6	4,721.2	4,690.6	10.3	11.3	-68.43	107.6	-403.3	416.5	395.5	20.98	19.855	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 4-7H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.0	4,898.6	4,816.3	4,780.9	10.5	11.7	-70.55	102.1	-432.4	443.5	421.9	21.57	20.561	
5,000.0	4,998.6	4,911.3	4,871.2	10.7	12.2	-72.43	96.6	-461.4	470.9	448.7	22.18	21.231	
5,100.0	5,098.6	5,006.3	4,961.5	10.9	12.6	-74.11	91.1	-490.4	498.8	476.0	22.81	21.864	
5,200.0	5,198.6	5,101.4	5,051.9	11.2	13.1	-75.61	85.6	-519.5	527.1	503.6	23.47	22.462	
5,300.0	5,298.6	5,196.4	5,142.2	11.4	13.6	-76.96	80.1	-548.5	555.6	531.5	24.13	23.023	
5,400.0	5,398.6	5,291.5	5,232.5	11.6	14.1	-78.18	74.6	-577.6	584.4	559.6	24.82	23.551	
5,500.7	5,499.3	5,387.2	5,323.5	11.8	14.7	-79.29	69.1	-606.8	613.7	588.2	25.52	24.051	
5,600.0	5,598.6	5,482.1	5,413.7	12.1	15.2	24.99	63.6	-635.8	641.2	616.7	24.48	26.191	
5,700.0	5,698.4	5,578.6	5,505.4	12.3	15.7	24.04	58.0	-665.3	666.0	641.1	24.93	26.714	
5,800.0	5,798.1	5,675.9	5,597.9	12.5	16.3	23.29	52.4	-695.1	687.8	662.4	25.38	27.100	
5,900.0	5,897.3	5,774.0	5,691.2	12.7	16.9	22.72	46.7	-725.0	706.5	680.7	25.83	27.352	
6,000.0	5,996.1	5,872.8	5,785.0	12.9	17.4	22.31	41.0	-755.2	722.1	695.8	26.28	27.475	
6,104.3	6,098.5	5,976.3	5,883.4	13.2	18.1	22.03	35.0	-786.8	734.9	708.2	26.75	27.470	
6,200.0	6,192.0	6,071.4	5,973.8	13.5	18.6	21.91	29.5	-815.9	745.1	717.8	27.25	27.343	
6,300.0	6,289.8	6,170.8	6,068.2	13.7	19.2	21.80	23.7	-846.3	755.7	728.0	27.77	27.210	
6,400.0	6,387.6	6,270.2	6,162.7	14.0	19.8	21.69	18.0	-876.7	766.4	738.1	28.30	27.077	
6,500.0	6,485.4	6,369.6	6,257.2	14.3	20.4	21.58	12.2	-907.0	777.0	748.2	28.84	26.945	
6,518.7	6,503.7	6,388.3	6,274.9	14.4	20.5	21.56	11.1	-912.7	779.0	750.1	28.94	26.921	
6,550.0	6,534.2	6,419.3	6,304.5	14.5	20.7	33.27	9.3	-922.2	782.3	753.2	29.08	26.903	
6,600.0	6,582.4	6,468.9	6,351.6	14.6	21.0	46.71	6.5	-937.4	787.5	758.2	29.33	26.851	
6,650.0	6,629.7	6,517.9	6,398.1	14.8	21.3	55.54	3.6	-952.3	792.6	763.0	29.61	26.763	
6,700.0	6,675.7	6,566.7	6,444.5	15.0	21.6	61.75	1.4	-967.2	797.6	767.7	29.94	26.640	
6,750.0	6,720.0	6,612.3	6,488.2	15.2	21.8	66.58	2.5	-980.5	802.9	772.6	30.30	26.496	
6,800.0	6,762.3	6,652.4	6,526.4	15.4	22.0	70.44	6.5	-991.7	808.9	778.2	30.68	26.368	
6,850.0	6,802.3	6,686.1	6,558.5	15.6	22.2	73.47	11.9	-1,000.7	816.1	785.1	31.04	26.295	
6,900.0	6,839.6	6,713.6	6,584.4	15.9	22.3	75.68	17.8	-1,007.7	825.1	793.7	31.38	26.298	
6,950.0	6,874.0	6,735.2	6,604.7	16.2	22.4	77.08	23.3	-1,013.0	836.3	804.6	31.69	26.391	
7,000.0	6,905.3	6,750.0	6,618.4	16.5	22.4	77.59	27.5	-1,016.5	849.9	817.9	31.97	26.581	
7,050.0	6,933.1	6,763.1	6,630.5	16.9	22.5	77.54	31.5	-1,019.5	865.9	833.7	32.26	26.841	
7,064.4	6,940.5	6,765.7	6,632.8	17.0	22.5	77.36	32.3	-1,020.1	871.0	838.7	32.34	26.933	
7,100.0	6,958.3	6,771.3	6,638.0	17.3	22.5	77.75	34.2	-1,021.4	884.4	851.7	32.66	27.076	
7,200.0	7,008.3	6,785.1	6,650.6	18.1	22.5	78.69	38.9	-1,024.4	928.1	894.5	33.64	27.587	
7,214.4	7,015.5	6,786.8	6,652.2	18.3	22.5	78.81	39.5	-1,024.8	935.1	901.3	33.79	27.673	
7,250.0	7,032.4	6,800.0	6,664.1	18.6	22.6	78.53	44.3	-1,027.7	953.4	919.4	33.97	28.068	
7,300.0	7,053.2	6,800.0	6,664.1	19.1	22.6	76.24	44.3	-1,027.7	981.2	947.1	34.08	28.788	
7,350.0	7,070.3	6,800.0	6,664.1	19.7	22.6	73.25	44.3	-1,027.7	1,011.4	977.2	34.18	29.586	
7,400.0	7,083.6	6,800.0	6,664.1	20.2	22.6	69.63	44.3	-1,027.7	1,043.5	1,009.2	34.24	30.478	
7,450.0	7,093.0	6,800.0	6,664.1	20.8	22.6	65.46	44.3	-1,027.7	1,077.1	1,042.9	34.21	31.488	
7,500.0	7,098.5	6,781.5	6,647.3	21.4	22.5	59.60	37.6	-1,023.6	1,111.6	1,077.8	33.83	32.856	
7,543.0	7,100.0	6,775.6	6,641.9	22.0	22.5	55.06	35.6	-1,022.3	1,142.0	1,108.4	33.54	34.050	
7,600.0	7,100.0	6,767.4	6,634.4	22.7	22.5	54.55	32.9	-1,020.5	1,183.0	1,148.9	34.04	34.748	
7,700.0	7,100.0	6,750.0	6,618.4	24.0	22.4	53.46	27.5	-1,016.5	1,257.8	1,222.8	34.91	36.026	
7,800.0	7,100.0	6,750.0	6,618.4	25.4	22.4	53.46	27.5	-1,016.5	1,335.6	1,299.5	36.10	37.000	
7,900.0	7,100.0	6,733.3	6,602.9	26.9	22.3	52.43	22.7	-1,012.5	1,415.9	1,378.8	37.04	38.230	
8,000.0	7,100.0	6,724.4	6,594.6	28.4	22.3	51.88	20.4	-1,010.4	1,498.4	1,460.3	38.13	39.297	
8,100.0	7,100.0	6,700.0	6,571.6	30.0	22.2	50.37	14.7	-1,004.2	1,583.1	1,544.2	38.93	40.669	
8,200.0	7,100.0	6,700.0	6,571.6	31.6	22.2	50.37	14.7	-1,004.2	1,669.0	1,628.8	40.23	41.490	
8,300.0	7,100.0	6,700.0	6,571.6	33.2	22.2	50.37	14.7	-1,004.2	1,756.4	1,714.8	41.55	42.268	
8,400.0	7,100.0	6,700.0	6,571.6	34.9	22.2	50.37	14.7	-1,004.2	1,845.0	1,802.1	42.90	43.005	
8,500.0	7,100.0	6,700.0	6,571.6	36.6	22.2	50.37	14.7	-1,004.2	1,934.8	1,890.5	44.27	43.703	
8,600.0	7,100.0	6,700.0	6,571.6	38.3	22.2	50.37	14.7	-1,004.2	2,025.5	1,979.8	45.66	44.362	
8,700.0	7,100.0	6,700.0	6,571.6	40.1	22.2	50.37	14.7	-1,004.2	2,117.0	2,070.0	47.06	44.987	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 4-7H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,800.0	7,100.0	6,678.1	6,550.9	41.8	22.1	49.04	10.4	-998.6	2,208.8	2,161.0	47.86	46.154	
8,900.0	7,100.0	6,674.3	6,547.3	43.6	22.1	48.81	9.8	-997.6	2,301.6	2,252.4	49.15	46.830	
9,000.0	7,100.0	6,670.7	6,543.9	45.4	22.1	48.59	9.2	-996.6	2,394.9	2,344.4	50.45	47.473	
9,100.0	7,100.0	6,650.0	6,524.2	47.2	22.0	47.35	6.2	-991.0	2,489.0	2,437.8	51.20	48.609	
9,200.0	7,100.0	6,650.0	6,524.2	49.0	22.0	47.35	6.2	-991.0	2,583.1	2,530.5	52.60	49.105	
9,300.0	7,100.0	6,650.0	6,524.2	50.8	22.0	47.35	6.2	-991.0	2,677.7	2,623.7	54.01	49.576	
9,400.0	7,100.0	6,650.0	6,524.2	52.6	22.0	47.35	6.2	-991.0	2,772.7	2,717.2	55.43	50.024	
9,500.0	7,100.0	6,650.0	6,524.2	54.4	22.0	47.35	6.2	-991.0	2,868.0	2,811.1	56.85	50.451	
9,600.0	7,100.0	6,650.0	6,524.2	56.3	22.0	47.35	6.2	-991.0	2,963.6	2,905.3	58.27	50.857	
9,700.0	7,100.0	6,650.0	6,524.2	58.1	22.0	47.35	6.2	-991.0	3,059.5	2,999.8	59.70	51.245	
9,800.0	7,100.0	6,650.0	6,524.2	59.9	22.0	47.35	6.2	-991.0	3,155.6	3,094.5	61.14	51.615	
9,900.0	7,100.0	6,650.0	6,524.2	61.8	22.0	47.35	6.2	-991.0	3,252.0	3,189.4	62.58	51.968	
10,000.0	7,100.0	6,650.0	6,524.2	63.7	22.0	47.35	6.2	-991.0	3,348.6	3,284.6	64.02	52.306	
10,100.0	7,100.0	6,650.0	6,524.2	65.5	22.0	47.35	6.2	-991.0	3,445.4	3,379.9	65.46	52.629	
10,200.0	7,100.0	6,650.0	6,524.2	67.4	22.0	47.35	6.2	-991.0	3,542.3	3,475.4	66.91	52.939	
10,300.0	7,100.0	6,650.0	6,524.2	69.2	22.0	47.35	6.2	-991.0	3,639.5	3,571.1	68.37	53.236	
10,400.0	7,100.0	6,650.0	6,524.2	71.1	22.0	47.35	6.2	-991.0	3,736.7	3,666.9	69.82	53.520	
10,500.0	7,100.0	6,650.0	6,524.2	73.0	22.0	47.35	6.2	-991.0	3,834.2	3,762.9	71.28	53.793	
10,600.0	7,100.0	6,650.0	6,524.2	74.9	22.0	47.35	6.2	-991.0	3,931.7	3,859.0	72.74	54.055	
10,700.0	7,100.0	6,650.0	6,524.2	76.7	22.0	47.35	6.2	-991.0	4,029.4	3,955.2	74.20	54.307	
10,800.0	7,100.0	6,650.0	6,524.2	78.6	22.0	47.35	6.2	-991.0	4,127.2	4,051.5	75.66	54.549	
10,900.0	7,100.0	6,650.0	6,524.2	80.5	22.0	47.35	6.2	-991.0	4,225.0	4,147.9	77.12	54.782	
11,000.0	7,100.0	6,650.0	6,524.2	82.4	22.0	47.35	6.2	-991.0	4,323.0	4,244.4	78.59	55.007	
11,100.0	7,100.0	6,650.0	6,524.2	84.3	22.0	47.35	6.2	-991.0	4,421.1	4,341.0	80.06	55.223	
11,200.0	7,100.0	6,650.0	6,524.2	86.2	22.0	47.35	6.2	-991.0	4,519.2	4,437.7	81.53	55.432	
11,300.0	7,100.0	6,627.6	6,502.8	88.1	21.9	46.03	3.7	-984.8	4,617.0	4,535.3	81.74	56.485	
11,400.0	7,100.0	6,626.6	6,501.8	90.0	21.9	45.97	3.6	-984.6	4,715.3	4,632.2	83.13	56.722	
11,500.0	7,100.0	6,625.7	6,500.9	91.8	21.9	45.92	3.5	-984.3	4,813.6	4,729.1	84.52	56.952	
11,600.0	7,100.0	6,624.7	6,500.0	93.7	21.9	45.86	3.4	-984.0	4,912.0	4,826.1	85.91	57.174	
11,700.0	7,100.0	6,623.9	6,499.2	95.6	21.9	45.81	3.4	-983.8	5,010.5	4,923.2	87.31	57.389	
11,800.0	7,100.0	6,623.0	6,498.4	97.5	21.9	45.76	3.3	-983.5	5,109.0	5,020.3	88.70	57.597	
11,892.4	7,100.0	6,600.0	6,476.4	99.3	21.8	44.43	1.9	-977.0	5,200.5	5,111.9	88.59	58.702	
11,900.0	7,100.0	6,600.0	6,476.4	99.4	21.8	45.06	1.9	-977.0	5,208.0	5,118.7	89.37	58.273	
11,958.5	7,100.0	6,600.0	6,476.4	100.4	21.8	49.48	1.9	-977.0	5,265.6	5,170.8	94.76	55.570	
12,000.0	7,100.0	6,600.0	6,476.4	101.1	21.8	49.48	1.9	-977.0	5,306.4	5,211.1	95.35	55.653	
12,100.0	7,100.0	6,600.0	6,476.4	103.0	21.8	49.48	1.9	-977.0	5,404.8	5,307.9	96.86	55.800	
12,200.0	7,100.0	6,600.0	6,476.4	104.9	21.8	49.48	1.9	-977.0	5,503.2	5,404.8	98.37	55.942	
12,300.0	7,100.0	6,600.0	6,476.4	106.8	21.8	49.48	1.9	-977.0	5,601.7	5,501.8	99.89	56.080	
12,400.0	7,100.0	6,600.0	6,476.4	108.7	21.8	49.48	1.9	-977.0	5,700.2	5,598.8	101.40	56.215	
12,500.0	7,100.0	6,600.0	6,476.4	110.6	21.8	49.48	1.9	-977.0	5,798.8	5,695.9	102.92	56.345	
12,600.0	7,100.0	6,600.0	6,476.4	112.5	21.8	49.48	1.9	-977.0	5,897.4	5,793.0	104.43	56.472	
12,700.0	7,100.0	6,600.0	6,476.4	114.4	21.8	49.48	1.9	-977.0	5,996.1	5,890.2	105.95	56.595	
12,800.0	7,100.0	6,600.0	6,476.4	116.3	21.8	49.48	1.9	-977.0	6,094.8	5,987.4	107.46	56.715	
12,900.0	7,100.0	6,600.0	6,476.4	118.2	21.8	49.48	1.9	-977.0	6,193.6	6,084.6	108.98	56.832	
13,000.0	7,100.0	6,600.0	6,476.4	120.1	21.8	49.48	1.9	-977.0	6,292.4	6,181.9	110.50	56.945	
13,100.0	7,100.0	6,600.0	6,476.4	122.0	21.8	49.48	1.9	-977.0	6,391.2	6,279.2	112.02	57.055	
13,200.0	7,100.0	6,600.0	6,476.4	123.9	21.8	49.48	1.9	-977.0	6,490.1	6,376.6	113.54	57.163	
13,300.0	7,100.0	6,600.0	6,476.4	125.8	21.8	49.48	1.9	-977.0	6,589.0	6,474.0	115.06	57.268	
13,400.0	7,100.0	6,600.0	6,476.4	127.7	21.8	49.48	1.9	-977.0	6,688.0	6,571.4	116.58	57.370	
13,500.0	7,100.0	6,600.0	6,476.4	129.6	21.8	49.48	1.9	-977.0	6,786.9	6,668.8	118.10	57.470	
13,600.0	7,100.0	6,600.0	6,476.4	131.5	21.8	49.48	1.9	-977.0	6,885.9	6,766.3	119.62	57.567	
13,700.0	7,100.0	6,600.0	6,476.4	133.4	21.8	49.48	1.9	-977.0	6,985.0	6,863.8	121.14	57.662	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Hebron 0780 4-7H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
13,800.0	7,100.0	6,600.0	6,476.4	135.4	21.8	49.48	1.9	-977.0	7,084.0	6,961.3	122.66	57.754	
13,900.0	7,100.0	6,600.0	6,476.4	137.3	21.8	49.48	1.9	-977.0	7,183.1	7,058.9	124.18	57.844	
14,000.0	7,100.0	6,600.0	6,476.4	139.2	21.8	49.48	1.9	-977.0	7,282.2	7,156.5	125.70	57.932	
14,100.0	7,100.0	6,600.0	6,476.4	141.1	21.8	49.48	1.9	-977.0	7,381.3	7,254.1	127.22	58.018	
14,200.0	7,100.0	6,600.0	6,476.4	143.0	21.8	49.48	1.9	-977.0	7,480.5	7,351.7	128.75	58.103	
14,300.0	7,100.0	6,600.0	6,476.4	144.9	21.8	49.48	1.9	-977.0	7,579.7	7,449.4	130.27	58.185	
14,400.0	7,100.0	6,600.0	6,476.4	146.8	21.8	49.48	1.9	-977.0	7,678.9	7,547.1	131.79	58.265	
14,500.0	7,100.0	6,600.0	6,476.4	148.7	21.8	49.48	1.9	-977.0	7,778.1	7,644.8	133.32	58.343	
14,600.0	7,100.0	6,600.0	6,476.4	150.6	21.8	49.48	1.9	-977.0	7,877.3	7,742.5	134.84	58.420	
14,700.0	7,100.0	6,600.0	6,476.4	152.5	21.8	49.48	1.9	-977.0	7,976.6	7,840.2	136.36	58.495	
14,800.0	7,100.0	6,600.0	6,476.4	154.4	21.8	49.48	1.9	-977.0	8,075.8	7,938.0	137.89	58.569	
14,900.0	7,100.0	6,600.0	6,476.4	156.3	21.8	49.48	1.9	-977.0	8,175.1	8,035.7	139.41	58.640	
15,000.0	7,100.0	6,600.0	6,476.4	158.2	21.8	49.48	1.9	-977.0	8,274.4	8,133.5	140.94	58.711	
15,100.0	7,100.0	6,600.0	6,476.4	160.1	21.8	49.48	1.9	-977.0	8,373.8	8,231.3	142.46	58.780	
15,200.0	7,100.0	6,600.0	6,476.4	162.1	21.8	49.48	1.9	-977.0	8,473.1	8,329.1	143.99	58.847	
15,300.0	7,100.0	6,600.0	6,476.4	164.0	21.8	49.48	1.9	-977.0	8,572.5	8,427.0	145.51	58.913	
15,400.0	7,100.0	6,600.0	6,476.4	165.9	21.8	49.48	1.9	-977.0	8,671.8	8,524.8	147.04	58.978	
15,500.0	7,100.0	6,600.0	6,476.4	167.8	21.8	49.48	1.9	-977.0	8,771.2	8,622.7	148.56	59.041	
15,600.0	7,100.0	6,600.0	6,476.4	169.7	21.8	49.48	1.9	-977.0	8,870.6	8,720.5	150.09	59.103	
15,700.0	7,100.0	6,600.0	6,476.4	171.6	21.8	49.48	1.9	-977.0	8,970.0	8,818.4	151.61	59.164	
15,800.0	7,100.0	6,600.0	6,476.4	173.5	21.8	49.48	1.9	-977.0	9,069.5	8,916.3	153.14	59.224	
15,900.0	7,100.0	6,600.0	6,476.4	175.4	21.8	49.48	1.9	-977.0	9,168.9	9,014.2	154.67	59.282	
16,000.0	7,100.0	6,600.0	6,476.4	177.3	21.8	49.48	1.9	-977.0	9,268.4	9,112.2	156.19	59.340	
16,100.0	7,100.0	6,600.0	6,476.4	179.2	21.8	49.48	1.9	-977.0	9,367.8	9,210.1	157.72	59.396	
16,200.0	7,100.0	6,600.0	6,476.4	181.2	21.8	49.48	1.9	-977.0	9,467.3	9,308.1	159.25	59.451	
16,300.0	7,100.0	6,600.0	6,476.4	183.1	21.8	49.48	1.9	-977.0	9,566.8	9,406.0	160.77	59.505	
16,400.0	7,100.0	6,600.0	6,476.4	185.0	21.8	49.48	1.9	-977.0	9,666.3	9,504.0	162.30	59.558	
16,500.0	7,100.0	6,600.0	6,476.4	186.9	21.8	49.48	1.9	-977.0	9,765.8	9,602.0	163.83	59.611	
16,600.0	7,100.0	6,600.0	6,476.4	188.8	21.8	49.48	1.9	-977.0	9,865.3	9,700.0	165.35	59.662	
16,700.0	7,100.0	6,600.0	6,476.4	190.7	21.8	49.48	1.9	-977.0	9,964.8	9,797.9	166.88	59.712	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 2-8H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-6.70	150.3	-17.7	151.3				
100.0	100.0	100.0	100.0	0.1	0.1	-6.70	150.3	-17.7	151.3	151.1	0.19	801.541	
200.0	200.0	200.0	200.0	0.3	0.3	-6.70	150.3	-17.7	151.3	150.7	0.64	237.076	
300.0	300.0	300.0	300.0	0.5	0.5	-6.70	150.3	-17.7	151.3	150.2	1.09	139.111	
400.0	400.0	400.0	400.0	0.8	0.8	-6.70	150.3	-17.7	151.3	149.8	1.54	98.435	
500.0	500.0	500.0	500.0	1.0	1.0	-6.70	150.3	-17.7	151.3	149.3	1.99	76.165	CC, ES
600.0	600.0	600.0	600.0	1.2	1.2	136.86	150.3	-17.7	152.6	150.2	2.41	63.214	
673.0	672.9	672.9	672.9	1.3	1.4	137.71	150.3	-17.7	155.2	152.4	2.72	57.105	
700.0	699.8	699.8	699.8	1.4	1.4	138.11	150.3	-17.7	156.4	153.5	2.83	55.247	
800.0	799.7	799.7	799.7	1.6	1.7	139.54	150.3	-17.7	160.9	157.7	3.26	49.398	
900.0	899.5	899.5	899.5	1.8	1.9	140.90	150.3	-17.7	165.6	161.9	3.69	44.831	
1,000.0	999.3	999.3	999.3	2.0	2.1	142.18	150.3	-17.7	170.3	166.2	4.13	41.195	
1,100.0	1,099.1	1,099.1	1,099.1	2.3	2.3	143.39	150.3	-17.7	175.1	170.5	4.58	38.248	
1,200.0	1,198.9	1,198.9	1,198.9	2.5	2.6	144.53	150.3	-17.7	180.0	175.0	5.02	35.821	
1,300.0	1,298.8	1,298.8	1,298.8	2.8	2.8	145.62	150.3	-17.7	184.9	179.5	5.47	33.792	
1,328.4	1,327.1	1,327.1	1,327.1	2.8	2.9	145.91	150.3	-17.7	186.3	180.7	5.60	33.276	
1,400.0	1,398.6	1,398.6	1,398.6	3.0	3.0	146.53	150.3	-17.7	189.2	183.3	5.91	31.997	
1,501.4	1,500.0	1,500.0	1,500.0	3.2	3.2	3.71	150.3	-17.7	190.7	184.3	6.42	29.692	
1,600.0	1,598.6	1,598.6	1,598.6	3.4	3.5	3.71	150.3	-17.7	190.7	183.9	6.84	27.877	
1,700.0	1,698.6	1,698.6	1,698.6	3.6	3.7	3.71	150.3	-17.7	190.7	183.4	7.26	26.255	
1,800.0	1,798.6	1,798.6	1,798.6	3.8	3.9	3.71	150.3	-17.7	190.7	183.0	7.69	24.803	
1,900.0	1,898.6	1,898.6	1,898.6	4.0	4.1	3.71	150.3	-17.7	190.7	182.6	8.12	23.495	
2,000.0	1,998.6	1,998.6	1,998.6	4.2	4.4	3.71	150.3	-17.7	190.7	182.2	8.55	22.312	
2,100.0	2,098.6	2,098.6	2,098.6	4.4	4.6	3.71	150.3	-17.7	190.7	181.7	8.98	21.239	
2,200.0	2,198.6	2,198.6	2,198.6	4.6	4.8	3.71	150.3	-17.7	190.7	181.3	9.41	20.260	
2,300.0	2,298.6	2,298.6	2,298.6	4.8	5.0	3.71	150.3	-17.7	190.7	180.9	9.85	19.365	
2,400.0	2,398.6	2,398.6	2,398.6	5.0	5.3	3.71	150.3	-17.7	190.7	180.4	10.28	18.543	
2,500.0	2,498.6	2,498.6	2,498.6	5.2	5.5	3.71	150.3	-17.7	190.7	180.0	10.72	17.786	
2,600.0	2,598.6	2,598.6	2,598.6	5.5	5.7	3.71	150.3	-17.7	190.7	179.5	11.16	17.088	
2,700.0	2,698.6	2,698.6	2,698.6	5.7	5.9	3.71	150.3	-17.7	190.7	179.1	11.60	16.440	
2,800.0	2,798.6	2,798.6	2,798.6	5.9	6.2	3.71	150.3	-17.7	190.7	178.7	12.04	15.839	
2,900.0	2,898.6	2,898.6	2,898.6	6.1	6.4	3.71	150.3	-17.7	190.7	178.2	12.48	15.280	
3,000.0	2,998.6	2,998.6	2,998.6	6.3	6.6	3.71	150.3	-17.7	190.7	177.8	12.92	14.758	
3,100.0	3,098.6	3,098.6	3,098.6	6.5	6.8	3.71	150.3	-17.7	190.7	177.3	13.36	14.270	
3,200.0	3,198.6	3,198.6	3,198.6	6.8	7.1	3.71	150.3	-17.7	190.7	176.9	13.81	13.813	
3,300.0	3,298.6	3,298.6	3,298.6	7.0	7.3	3.71	150.3	-17.7	190.7	176.5	14.25	13.383	
3,400.0	3,398.6	3,398.6	3,398.6	7.2	7.5	3.71	150.3	-17.7	190.7	176.0	14.69	12.980	
3,500.0	3,498.6	3,498.6	3,498.6	7.4	7.7	3.71	150.3	-17.7	190.7	175.6	15.14	12.599	
3,600.0	3,598.6	3,598.6	3,598.6	7.6	8.0	3.71	150.3	-17.7	190.7	175.1	15.58	12.240	
3,700.0	3,698.6	3,698.6	3,698.6	7.9	8.2	3.71	150.3	-17.7	190.7	174.7	16.02	11.901	
3,800.0	3,798.6	3,798.6	3,798.6	8.1	8.4	3.71	150.3	-17.7	190.7	174.2	16.47	11.579	
3,900.0	3,898.6	3,898.6	3,898.6	8.3	8.6	3.71	150.3	-17.7	190.7	173.8	16.91	11.275	
4,000.0	3,998.6	3,998.6	3,998.6	8.5	8.9	3.71	150.3	-17.7	190.7	173.3	17.36	10.986	
4,100.0	4,098.6	4,098.6	4,098.6	8.7	9.1	3.71	150.3	-17.7	190.7	172.9	17.80	10.711	
4,200.0	4,198.6	4,198.6	4,198.6	9.0	9.3	3.71	150.3	-17.7	190.7	172.5	18.25	10.449	
4,300.0	4,298.6	4,298.6	4,298.6	9.2	9.5	3.71	150.3	-17.7	190.7	172.0	18.70	10.200	
4,400.0	4,398.6	4,398.6	4,398.6	9.4	9.8	3.71	150.3	-17.7	190.7	171.6	19.14	9.963	
4,500.0	4,498.6	4,498.6	4,498.6	9.6	10.0	3.71	150.3	-17.7	190.7	171.1	19.59	9.736	
4,600.0	4,598.6	4,598.6	4,598.6	9.8	10.2	3.71	150.3	-17.7	190.7	170.7	20.03	9.519	
4,700.0	4,698.6	4,698.6	4,698.6	10.1	10.4	3.71	150.3	-17.7	190.7	170.2	20.48	9.311	
4,800.0	4,798.6	4,798.6	4,798.6	10.3	10.7	3.71	150.3	-17.7	190.7	169.8	20.93	9.113	
4,900.0	4,898.6	4,898.6	4,898.6	10.5	10.9	3.71	150.3	-17.7	190.7	169.3	21.37	8.922	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 2-8H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.6	4,998.6	4,998.6	10.7	11.1	3.71	150.3	-17.7	190.7	168.9	21.82	8.740	
5,100.0	5,098.6	5,099.0	5,099.0	10.9	11.3	3.20	150.3	-19.4	190.6	168.3	22.25	8.565	
5,200.0	5,198.6	5,199.1	5,199.0	11.2	11.5	1.63	150.3	-24.6	190.4	167.7	22.67	8.397	
5,267.0	5,265.6	5,266.0	5,265.6	11.3	11.7	0.00	150.3	-30.0	190.3	167.3	22.95	8.291	
5,300.0	5,298.6	5,298.8	5,298.3	11.4	11.7	-0.97	150.3	-33.2	190.3	167.2	23.09	8.243	
5,400.0	5,398.6	5,397.7	5,396.5	11.6	11.9	-4.57	150.3	-45.2	190.9	167.4	23.51	8.122	
5,500.7	5,499.3	5,496.6	5,494.2	11.8	12.2	-9.12	150.3	-60.5	192.8	168.9	23.92	8.059	
5,600.0	5,598.6	5,594.8	5,591.0	12.1	12.4	92.06	150.3	-76.8	196.2	171.8	24.42	8.032	SF
5,700.0	5,698.4	5,694.1	5,688.9	12.3	12.6	88.86	150.3	-93.3	200.5	175.7	24.87	8.065	
5,800.0	5,798.1	5,793.7	5,787.2	12.5	12.9	86.74	150.3	-109.8	205.3	179.9	25.32	8.106	
5,900.0	5,897.3	5,893.6	5,885.6	12.7	13.1	85.66	150.3	-126.4	209.9	184.1	25.79	8.139	
6,000.0	5,996.1	5,993.5	5,984.1	12.9	13.4	85.56	150.3	-143.0	214.4	188.1	26.29	8.156	
6,104.3	6,098.5	6,097.6	6,086.8	13.2	13.7	86.43	150.3	-160.2	218.7	191.9	26.83	8.154	
6,200.0	6,192.0	6,193.1	6,181.0	13.5	13.9	87.72	150.3	-176.1	222.7	195.4	27.34	8.145	
6,300.0	6,289.8	6,292.9	6,279.4	13.7	14.2	89.02	150.3	-192.6	227.0	199.1	27.90	8.136	
6,400.0	6,387.6	6,392.6	6,377.8	14.0	14.5	90.27	150.3	-209.2	231.4	202.9	28.48	8.127	
6,500.0	6,485.4	6,485.5	6,469.4	14.3	14.7	91.42	150.6	-224.6	236.3	207.2	29.04	8.136	
6,518.7	6,503.7	6,500.0	6,483.6	14.4	14.8	91.64	151.2	-226.9	237.9	208.8	29.14	8.164	
6,550.0	6,534.2	6,521.0	6,504.3	14.5	14.8	103.91	152.8	-230.2	242.3	213.0	29.26	8.280	
6,600.0	6,582.4	6,550.0	6,532.7	14.6	14.9	117.90	156.2	-234.7	255.0	225.6	29.36	8.686	
6,650.0	6,629.7	6,586.5	6,568.3	14.8	15.0	127.29	162.5	-240.1	274.1	244.8	29.37	9.333	
6,700.0	6,675.7	6,614.9	6,595.7	15.0	15.1	133.38	169.0	-244.0	299.5	270.2	29.28	10.230	
6,750.0	6,720.0	6,639.8	6,619.4	15.2	15.2	137.39	175.8	-247.4	330.3	301.2	29.09	11.354	
6,800.0	6,762.3	6,661.1	6,639.4	15.4	15.2	139.85	182.4	-250.1	365.9	337.0	28.85	12.684	
6,850.0	6,802.3	6,678.6	6,655.7	15.6	15.3	140.96	188.5	-252.2	405.4	376.9	28.57	14.189	
6,900.0	6,839.6	6,700.0	6,675.4	15.9	15.4	141.40	196.5	-254.8	448.3	420.0	28.30	15.839	
6,950.0	6,874.0	6,700.0	6,675.4	16.2	15.4	138.19	196.5	-254.8	493.5	465.2	28.28	17.451	
7,000.0	6,905.3	6,700.0	6,675.4	16.5	15.4	131.55	196.5	-254.8	540.9	512.2	28.70	18.847	
7,050.0	6,933.1	6,716.0	6,689.9	16.9	15.4	123.68	203.0	-256.6	589.1	559.6	29.46	19.999	
7,064.4	6,940.5	6,717.0	6,690.8	17.0	15.4	119.01	203.4	-256.7	603.3	573.3	29.93	20.158	
7,100.0	6,958.3	6,719.1	6,692.7	17.3	15.4	119.79	204.3	-256.9	638.2	608.1	30.13	21.185	
7,200.0	7,008.3	6,724.3	6,697.4	18.1	15.4	121.69	206.5	-257.5	736.8	706.1	30.76	23.957	
7,214.4	7,015.5	6,725.0	6,698.0	18.3	15.4	121.93	206.8	-257.6	751.1	720.2	30.85	24.343	
7,250.0	7,032.4	6,726.2	6,699.0	18.6	15.4	105.64	207.3	-257.7	786.4	753.9	32.46	24.222	
7,300.0	7,053.2	6,726.3	6,699.1	19.1	15.4	49.53	207.4	-257.7	836.2	806.9	29.30	28.543	
7,350.0	7,070.3	6,724.7	6,697.7	19.7	15.4	9.12	206.7	-257.5	885.9	862.6	23.31	38.005	
7,400.0	7,083.6	6,721.7	6,695.0	20.2	15.4	-4.02	205.4	-257.2	935.3	912.5	22.78	41.059	
7,450.0	7,093.0	6,717.3	6,691.0	20.8	15.4	-9.54	203.5	-256.7	983.9	961.0	22.83	43.105	
7,500.0	7,098.5	6,700.0	6,675.4	21.4	15.4	-12.34	196.5	-254.8	1,031.6	1,008.7	22.88	45.082	
7,543.0	7,100.0	6,700.0	6,675.4	22.0	15.4	-14.03	196.5	-254.8	1,071.3	1,048.3	23.00	46.572	
7,600.0	7,100.0	6,700.0	6,675.4	22.7	15.4	-14.03	196.5	-254.8	1,123.6	1,100.4	23.21	48.402	
7,700.0	7,100.0	6,700.0	6,675.4	24.0	15.4	-14.03	196.5	-254.8	1,216.3	1,192.7	23.62	51.504	
7,800.0	7,100.0	6,674.6	6,652.0	25.4	15.3	-13.70	187.1	-251.8	1,309.3	1,285.4	23.97	54.628	
7,900.0	7,100.0	6,650.0	6,629.0	26.9	15.2	-13.42	178.9	-248.7	1,403.5	1,379.1	24.36	57.620	
8,000.0	7,100.0	6,650.0	6,629.0	28.4	15.2	-13.42	178.9	-248.7	1,497.8	1,472.9	24.87	60.234	
8,100.0	7,100.0	6,650.0	6,629.0	30.0	15.2	-13.42	178.9	-248.7	1,592.7	1,567.3	25.40	62.697	
8,200.0	7,100.0	6,650.0	6,629.0	31.6	15.2	-13.42	178.9	-248.7	1,688.3	1,662.3	25.97	65.011	
8,300.0	7,100.0	6,650.0	6,629.0	33.2	15.2	-13.42	178.9	-248.7	1,784.3	1,757.7	26.56	67.184	
8,400.0	7,100.0	6,625.4	6,605.7	34.9	15.1	-13.17	171.7	-245.4	1,880.0	1,853.0	27.07	69.458	
8,500.0	7,100.0	6,600.0	6,581.3	36.6	15.1	-12.94	165.4	-242.0	1,976.9	1,949.3	27.59	71.642	
8,600.0	7,100.0	6,600.0	6,581.3	38.3	15.1	-12.94	165.4	-242.0	2,073.4	2,045.1	28.23	73.434	
8,700.0	7,100.0	6,600.0	6,581.3	40.1	15.1	-12.94	165.4	-242.0	2,170.2	2,141.3	28.89	75.116	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 2-8H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,800.0	7,100.0	6,600.0	6,581.3	41.8	15.1	-12.94	165.4	-242.0	2,267.3	2,237.7	29.56	76.697	
8,900.0	7,100.0	6,600.0	6,581.3	43.6	15.1	-12.94	165.4	-242.0	2,364.6	2,334.3	30.24	78.183	
9,000.0	7,100.0	6,600.0	6,581.3	45.4	15.1	-12.94	165.4	-242.0	2,462.1	2,431.2	30.94	79.582	
9,100.0	7,100.0	6,600.0	6,581.3	47.2	15.1	-12.94	165.4	-242.0	2,559.8	2,528.2	31.64	80.899	
9,200.0	7,100.0	6,600.0	6,581.3	49.0	15.1	-12.94	165.4	-242.0	2,657.7	2,625.4	32.36	82.141	
9,300.0	7,100.0	6,600.0	6,581.3	50.8	15.1	-12.94	165.4	-242.0	2,755.8	2,722.7	33.08	83.313	
9,400.0	7,100.0	6,600.0	6,581.3	52.6	15.1	-12.94	165.4	-242.0	2,854.0	2,820.2	33.81	84.419	
9,500.0	7,100.0	6,577.1	6,559.2	54.4	15.0	-12.76	160.6	-238.7	2,951.7	2,917.3	34.43	85.731	
9,600.0	7,100.0	6,574.1	6,556.3	56.3	15.0	-12.74	160.1	-238.3	3,050.0	3,014.8	35.16	86.757	
9,700.0	7,100.0	6,571.3	6,553.6	58.1	15.0	-12.72	159.6	-237.9	3,148.4	3,112.5	35.89	87.730	
9,800.0	7,100.0	6,550.0	6,532.7	59.9	14.9	-12.58	156.2	-234.7	3,247.2	3,210.6	36.54	88.878	
9,900.0	7,100.0	6,550.0	6,532.7	61.8	14.9	-12.58	156.2	-234.7	3,345.6	3,308.3	37.29	89.723	
10,000.0	7,100.0	6,550.0	6,532.7	63.7	14.9	-12.58	156.2	-234.7	3,444.1	3,406.1	38.05	90.527	
10,100.0	7,100.0	6,550.0	6,532.7	65.5	14.9	-12.58	156.2	-234.7	3,542.7	3,503.9	38.81	91.292	
10,200.0	7,100.0	6,550.0	6,532.7	67.4	14.9	-12.58	156.2	-234.7	3,641.4	3,601.8	39.57	92.021	
10,300.0	7,100.0	6,550.0	6,532.7	69.2	14.9	-12.58	156.2	-234.7	3,740.2	3,699.8	40.34	92.715	
10,400.0	7,100.0	6,550.0	6,532.7	71.1	14.9	-12.58	156.2	-234.7	3,839.0	3,797.9	41.11	93.379	
10,500.0	7,100.0	6,550.0	6,532.7	73.0	14.9	-12.58	156.2	-234.7	3,937.9	3,896.0	41.89	94.012	
10,600.0	7,100.0	6,550.0	6,532.7	74.9	14.9	-12.58	156.2	-234.7	4,036.8	3,994.1	42.66	94.618	
10,700.0	7,100.0	6,550.0	6,532.7	76.7	14.9	-12.58	156.2	-234.7	4,135.8	4,092.3	43.44	95.197	
10,800.0	7,100.0	6,550.0	6,532.7	78.6	14.9	-12.58	156.2	-234.7	4,234.8	4,190.6	44.23	95.752	
10,900.0	7,100.0	6,550.0	6,532.7	80.5	14.9	-12.58	156.2	-234.7	4,333.9	4,288.9	45.01	96.284	
11,000.0	7,100.0	6,550.0	6,532.7	82.4	14.9	-12.58	156.2	-234.7	4,433.0	4,387.2	45.80	96.794	
11,100.0	7,100.0	6,550.0	6,532.7	84.3	14.9	-12.58	156.2	-234.7	4,532.2	4,485.6	46.59	97.284	
11,200.0	7,100.0	6,550.0	6,532.7	86.2	14.9	-12.58	156.2	-234.7	4,631.3	4,584.0	47.38	97.754	
11,300.0	7,100.0	6,550.0	6,532.7	88.1	14.9	-12.58	156.2	-234.7	4,730.6	4,682.4	48.17	98.206	
11,400.0	7,100.0	6,550.0	6,532.7	90.0	14.9	-12.58	156.2	-234.7	4,829.8	4,780.9	48.96	98.641	
11,500.0	7,100.0	6,550.0	6,532.7	91.8	14.9	-12.58	156.2	-234.7	4,929.1	4,879.4	49.76	99.060	
11,600.0	7,100.0	6,550.0	6,532.7	93.7	14.9	-12.58	156.2	-234.7	5,028.4	4,977.9	50.56	99.463	
11,700.0	7,100.0	6,550.0	6,532.7	95.6	14.9	-12.58	156.2	-234.7	5,127.8	5,076.4	51.35	99.852	
11,800.0	7,100.0	6,550.0	6,532.7	97.5	14.9	-12.58	156.2	-234.7	5,227.1	5,175.0	52.15	100.227	
11,892.4	7,100.0	6,550.0	6,532.7	99.3	14.9	-12.58	156.2	-234.7	5,319.0	5,266.1	52.89	100.561	
11,900.0	7,100.0	6,550.0	6,532.7	99.4	14.9	-11.21	156.2	-234.7	5,326.5	5,274.5	52.00	102.440	
11,958.5	7,100.0	6,550.0	6,532.7	100.4	14.9	-0.38	156.2	-234.7	5,384.7	5,336.0	48.63	110.724	
12,000.0	7,100.0	6,550.0	6,532.7	101.1	14.9	-0.38	156.2	-234.7	5,426.0	5,377.1	48.92	110.907	
12,100.0	7,100.0	6,550.0	6,532.7	103.0	14.9	-0.38	156.2	-234.7	5,525.4	5,475.8	49.63	111.338	
12,200.0	7,100.0	6,550.0	6,532.7	104.9	14.9	-0.38	156.2	-234.7	5,624.9	5,574.6	50.33	111.755	
12,300.0	7,100.0	6,550.0	6,532.7	106.8	14.9	-0.38	156.2	-234.7	5,724.4	5,673.4	51.04	112.158	
12,400.0	7,100.0	6,550.0	6,532.7	108.7	14.9	-0.38	156.2	-234.7	5,823.9	5,772.2	51.75	112.549	
12,500.0	7,100.0	6,550.0	6,532.7	110.6	14.9	-0.38	156.2	-234.7	5,923.5	5,871.0	52.45	112.927	
12,600.0	7,100.0	6,526.6	6,509.8	112.5	14.9	-0.72	153.3	-231.1	6,022.5	5,969.4	53.12	113.380	
12,700.0	7,100.0	6,525.8	6,509.0	114.4	14.9	-0.73	153.2	-231.0	6,122.0	6,068.2	53.83	113.737	
12,800.0	7,100.0	6,525.0	6,508.2	116.3	14.9	-0.75	153.1	-230.9	6,221.6	6,167.0	54.54	114.083	
12,900.0	7,100.0	6,524.2	6,507.5	118.2	14.9	-0.76	153.1	-230.7	6,321.1	6,265.9	55.25	114.419	
13,000.0	7,100.0	6,523.5	6,506.7	120.1	14.9	-0.77	153.0	-230.6	6,420.7	6,364.7	55.96	114.744	
13,100.0	7,100.0	6,500.0	6,483.6	122.0	14.8	-1.09	151.2	-226.9	6,520.7	6,464.1	56.64	115.135	
13,200.0	7,100.0	6,500.0	6,483.6	123.9	14.8	-1.09	151.2	-226.9	6,620.3	6,563.0	57.35	115.438	
13,300.0	7,100.0	6,500.0	6,483.6	125.8	14.8	-1.09	151.2	-226.9	6,719.9	6,661.8	58.06	115.732	
13,400.0	7,100.0	6,500.0	6,483.6	127.7	14.8	-1.09	151.2	-226.9	6,819.5	6,760.7	58.78	116.019	
13,500.0	7,100.0	6,500.0	6,483.6	129.6	14.8	-1.09	151.2	-226.9	6,919.1	6,859.6	59.49	116.297	
13,600.0	7,100.0	6,500.0	6,483.6	131.5	14.8	-1.09	151.2	-226.9	7,018.7	6,958.5	60.21	116.568	
13,700.0	7,100.0	6,500.0	6,483.6	133.4	14.8	-1.09	151.2	-226.9	7,118.3	7,057.4	60.93	116.832	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 2-8H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,800.0	7,100.0	6,500.0	6,483.6	135.4	14.8	-1.09	151.2	-226.9	7,217.9	7,156.3	61.64	117.089	
13,900.0	7,100.0	6,500.0	6,483.6	137.3	14.8	-1.09	151.2	-226.9	7,317.6	7,255.2	62.36	117.339	
14,000.0	7,100.0	6,500.0	6,483.6	139.2	14.8	-1.09	151.2	-226.9	7,417.2	7,354.1	63.08	117.583	
14,100.0	7,100.0	6,500.0	6,483.6	141.1	14.8	-1.09	151.2	-226.9	7,516.9	7,453.1	63.80	117.821	
14,200.0	7,100.0	6,500.0	6,483.6	143.0	14.8	-1.09	151.2	-226.9	7,616.5	7,552.0	64.52	118.053	
14,300.0	7,100.0	6,500.0	6,483.6	144.9	14.8	-1.09	151.2	-226.9	7,716.2	7,651.0	65.24	118.279	
14,400.0	7,100.0	6,500.0	6,483.6	146.8	14.8	-1.09	151.2	-226.9	7,815.9	7,749.9	65.96	118.500	
14,500.0	7,100.0	6,500.0	6,483.6	148.7	14.8	-1.09	151.2	-226.9	7,915.6	7,848.9	66.68	118.715	
14,600.0	7,100.0	6,500.0	6,483.6	150.6	14.8	-1.09	151.2	-226.9	8,015.3	7,947.9	67.40	118.925	
14,700.0	7,100.0	6,500.0	6,483.6	152.5	14.8	-1.09	151.2	-226.9	8,115.0	8,046.9	68.12	119.130	
14,800.0	7,100.0	6,500.0	6,483.6	154.4	14.8	-1.09	151.2	-226.9	8,214.7	8,145.9	68.84	119.331	
14,900.0	7,100.0	6,500.0	6,483.6	156.3	14.8	-1.09	151.2	-226.9	8,314.4	8,244.9	69.56	119.527	
15,000.0	7,100.0	6,500.0	6,483.6	158.2	14.8	-1.09	151.2	-226.9	8,414.2	8,343.9	70.28	119.718	
15,100.0	7,100.0	6,500.0	6,483.6	160.1	14.8	-1.09	151.2	-226.9	8,513.9	8,442.9	71.01	119.905	
15,200.0	7,100.0	6,500.0	6,483.6	162.1	14.8	-1.09	151.2	-226.9	8,613.6	8,541.9	71.73	120.088	
15,300.0	7,100.0	6,500.0	6,483.6	164.0	14.8	-1.09	151.2	-226.9	8,713.4	8,640.9	72.45	120.267	
15,400.0	7,100.0	6,500.0	6,483.6	165.9	14.8	-1.09	151.2	-226.9	8,813.1	8,740.0	73.17	120.442	
15,500.0	7,100.0	6,500.0	6,483.6	167.8	14.8	-1.09	151.2	-226.9	8,912.9	8,839.0	73.90	120.614	
15,600.0	7,100.0	6,500.0	6,483.6	169.7	14.8	-1.09	151.2	-226.9	9,012.6	8,938.0	74.62	120.781	
15,700.0	7,100.0	6,500.0	6,483.6	171.6	14.8	-1.09	151.2	-226.9	9,112.4	9,037.1	75.34	120.945	
15,800.0	7,100.0	6,500.0	6,483.6	173.5	14.8	-1.09	151.2	-226.9	9,212.2	9,136.1	76.07	121.106	
15,900.0	7,100.0	6,500.0	6,483.6	175.4	14.8	-1.09	151.2	-226.9	9,312.0	9,235.2	76.79	121.263	
16,000.0	7,100.0	6,500.0	6,483.6	177.3	14.8	-1.09	151.2	-226.9	9,411.8	9,334.2	77.52	121.417	
16,100.0	7,100.0	6,500.0	6,483.6	179.2	14.8	-1.09	151.2	-226.9	9,511.5	9,433.3	78.24	121.568	
16,200.0	7,100.0	6,500.0	6,483.6	181.2	14.8	-1.09	151.2	-226.9	9,611.3	9,532.4	78.96	121.716	
16,300.0	7,100.0	6,500.0	6,483.6	183.1	14.8	-1.09	151.2	-226.9	9,711.1	9,631.4	79.69	121.861	
16,400.0	7,100.0	6,500.0	6,483.6	185.0	14.8	-1.09	151.2	-226.9	9,810.9	9,730.5	80.42	122.004	
16,500.0	7,100.0	6,500.0	6,483.6	186.9	14.8	-1.09	151.2	-226.9	9,910.7	9,829.6	81.14	122.143	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 3-8H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.90	150.0	2.3	150.0				
100.0	100.0	100.0	100.0	0.1	0.1	0.90	150.0	2.3	150.0	149.8	0.19	794.573	
200.0	200.0	200.0	200.0	0.3	0.3	0.90	150.0	2.3	150.0	149.4	0.64	235.015	
300.0	300.0	300.0	300.0	0.5	0.5	0.90	150.0	2.3	150.0	148.9	1.09	137.901	
400.0	400.0	400.0	400.0	0.8	0.8	0.90	150.0	2.3	150.0	148.5	1.54	97.579	
500.0	500.0	500.0	500.0	1.0	1.0	0.90	150.0	2.3	150.0	148.0	1.99	75.503	CC, ES
600.0	600.0	597.5	597.5	1.2	1.2	144.59	151.2	2.9	152.6	150.2	2.41	63.333	
673.0	672.9	670.4	670.3	1.3	1.4	145.48	152.3	3.5	156.7	153.9	2.71	57.754	
700.0	699.8	697.3	697.2	1.4	1.4	145.88	152.7	3.7	158.4	155.6	2.82	56.092	
800.0	799.7	797.0	796.9	1.6	1.7	147.31	154.3	4.5	165.1	161.9	3.25	50.838	
900.0	899.5	896.7	896.6	1.8	1.9	148.62	155.9	5.3	171.9	168.2	3.68	46.716	
1,000.0	999.3	996.4	996.3	2.0	2.1	149.83	157.5	6.1	178.8	174.7	4.12	43.423	
1,100.0	1,099.1	1,096.1	1,096.0	2.3	2.3	150.95	159.1	6.9	185.7	181.2	4.56	40.745	
1,200.0	1,198.9	1,195.8	1,195.6	2.5	2.6	152.00	160.7	7.7	192.7	187.7	5.00	38.534	
1,300.0	1,298.8	1,295.4	1,295.3	2.8	2.8	152.96	162.3	8.5	199.8	194.3	5.45	36.681	
1,328.4	1,327.1	1,323.8	1,323.6	2.8	2.8	153.23	162.8	8.7	201.8	196.2	5.57	36.209	
1,400.0	1,398.6	1,395.2	1,395.1	3.0	3.0	153.79	163.9	9.3	206.1	200.2	5.88	35.021	
1,501.4	1,500.0	1,496.5	1,496.4	3.2	3.2	11.05	165.5	10.1	209.5	203.0	6.42	32.634	
1,600.0	1,598.6	1,595.1	1,594.9	3.4	3.5	11.17	167.1	10.9	211.2	204.3	6.84	30.885	
1,700.0	1,698.6	1,695.1	1,694.9	3.6	3.7	11.30	168.7	11.7	212.9	205.6	7.26	29.323	
1,800.0	1,798.6	1,798.7	1,798.5	3.8	3.9	11.40	170.0	12.3	214.2	206.5	7.68	27.893	
1,900.0	1,898.6	1,898.8	1,898.6	4.0	4.1	11.40	170.0	12.3	214.2	206.1	8.08	26.513	
2,000.0	1,998.6	1,998.8	1,998.6	4.2	4.3	11.40	170.0	12.3	214.2	205.7	8.51	25.182	
2,100.0	2,098.6	2,098.8	2,098.6	4.4	4.5	11.40	170.0	12.3	214.2	205.3	8.94	23.972	
2,200.0	2,198.6	2,198.8	2,198.6	4.6	4.8	11.40	170.0	12.3	214.2	204.9	9.37	22.868	
2,300.0	2,298.6	2,298.8	2,298.6	4.8	5.0	11.40	170.0	12.3	214.2	204.4	9.80	21.858	
2,400.0	2,398.6	2,398.8	2,398.6	5.0	5.2	11.40	170.0	12.3	214.2	204.0	10.24	20.930	
2,500.0	2,498.6	2,498.8	2,498.6	5.2	5.4	11.40	170.0	12.3	214.2	203.6	10.67	20.075	
2,600.0	2,598.6	2,598.8	2,598.6	5.5	5.7	11.40	170.0	12.3	214.2	203.1	11.11	19.286	
2,700.0	2,698.6	2,698.8	2,698.6	5.7	5.9	11.40	170.0	12.3	214.2	202.7	11.55	18.555	
2,800.0	2,798.6	2,798.8	2,798.6	5.9	6.1	11.40	170.0	12.3	214.2	202.2	11.98	17.876	
2,900.0	2,898.6	2,896.2	2,896.0	6.1	6.3	11.81	170.3	13.9	214.8	202.4	12.41	17.308	
3,000.0	2,998.6	2,993.4	2,993.0	6.3	6.5	13.02	171.1	18.8	216.7	203.9	12.84	16.882	
3,100.0	3,098.6	3,090.1	3,089.4	6.5	6.7	14.99	172.4	26.8	220.0	206.8	13.26	16.589	
3,200.0	3,198.6	3,186.2	3,184.8	6.8	7.0	17.62	174.2	38.0	225.2	211.5	13.70	16.436	
3,300.0	3,298.6	3,284.3	3,281.9	7.0	7.2	20.69	176.4	51.7	231.9	217.8	14.15	16.396	SF
3,400.0	3,398.6	3,383.3	3,379.9	7.2	7.5	23.63	178.7	65.7	239.4	224.8	14.60	16.396	
3,500.0	3,498.6	3,482.2	3,477.9	7.4	7.7	26.38	181.0	79.6	247.5	232.5	15.07	16.426	
3,600.0	3,598.6	3,581.2	3,575.8	7.6	8.0	28.96	183.3	93.6	256.2	240.6	15.54	16.481	
3,700.0	3,698.6	3,680.2	3,673.8	7.9	8.2	31.37	185.5	107.5	265.3	249.3	16.03	16.554	
3,800.0	3,798.6	3,779.2	3,771.7	8.1	8.5	33.62	187.8	121.4	274.9	258.4	16.52	16.643	
3,900.0	3,898.6	3,878.1	3,869.7	8.3	8.8	35.71	190.1	135.4	284.8	267.8	17.01	16.742	
4,000.0	3,998.6	3,977.1	3,967.7	8.5	9.1	37.66	192.4	149.3	295.1	277.6	17.52	16.850	
4,100.0	4,098.6	4,076.1	4,065.6	8.7	9.4	39.48	194.6	163.3	305.8	287.7	18.02	16.964	
4,200.0	4,198.6	4,175.1	4,163.6	9.0	9.7	41.17	196.9	177.2	316.7	298.2	18.54	17.083	
4,300.0	4,298.6	4,274.1	4,261.6	9.2	10.0	42.76	199.2	191.2	327.9	308.8	19.06	17.204	
4,400.0	4,398.6	4,373.0	4,359.5	9.4	10.3	44.23	201.5	205.1	339.3	319.7	19.58	17.328	
4,500.0	4,498.6	4,472.0	4,457.5	9.6	10.6	45.62	203.7	219.0	350.9	330.8	20.11	17.452	
4,600.0	4,598.6	4,571.0	4,555.4	9.8	10.9	46.91	206.0	233.0	362.7	342.1	20.64	17.575	
4,700.0	4,698.6	4,670.0	4,653.4	10.1	11.2	48.12	208.3	246.9	374.7	353.5	21.17	17.699	
4,800.0	4,798.6	4,768.9	4,751.4	10.3	11.5	49.26	210.6	260.9	386.8	365.1	21.71	17.821	
4,900.0	4,898.6	4,867.9	4,849.3	10.5	11.8	50.32	212.9	274.8	399.1	376.8	22.24	17.941	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 3-8H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.6	4,966.9	4,947.3	10.7	12.1	51.33	215.1	288.8	411.5	388.7	22.78	18.060	
5,100.0	5,098.6	5,065.9	5,045.3	10.9	12.4	52.27	217.4	302.7	424.0	400.7	23.33	18.177	
5,200.0	5,198.6	5,164.8	5,143.2	11.2	12.8	53.16	219.7	316.6	436.6	412.8	23.87	18.291	
5,300.0	5,298.6	5,263.8	5,241.2	11.4	13.1	54.00	222.0	330.6	449.4	425.0	24.42	18.404	
5,400.0	5,398.6	5,362.8	5,339.2	11.6	13.4	54.80	224.2	344.5	462.2	437.2	24.96	18.514	
5,500.7	5,499.3	5,462.5	5,437.8	11.8	13.7	55.55	226.5	358.6	475.2	449.7	25.52	18.622	
5,600.0	5,598.6	5,560.5	5,534.8	12.1	14.1	161.69	228.8	372.4	489.7	465.1	24.63	19.881	
5,700.0	5,698.4	5,658.6	5,631.9	12.3	14.4	162.43	231.0	386.2	507.6	482.6	25.03	20.285	
5,800.0	5,798.1	5,755.9	5,728.3	12.5	14.7	163.20	233.3	399.9	529.0	503.6	25.40	20.825	
5,900.0	5,897.3	5,852.5	5,823.8	12.7	15.0	163.99	235.5	413.5	553.7	528.0	25.76	21.498	
6,000.0	5,996.1	5,948.0	5,918.4	12.9	15.3	164.78	237.7	427.0	581.8	555.7	26.09	22.298	
6,104.3	6,098.5	6,046.5	6,015.9	13.2	15.7	165.59	240.0	440.8	614.7	588.3	26.42	23.266	
6,200.0	6,192.0	6,136.3	6,104.7	13.5	16.0	166.44	242.0	453.5	646.6	619.8	26.81	24.114	
6,300.0	6,289.8	6,230.1	6,197.6	13.7	16.3	167.24	244.2	466.7	680.1	652.8	27.23	24.975	
6,400.0	6,387.6	6,323.9	6,290.4	14.0	16.6	167.97	246.3	479.9	713.6	686.0	27.65	25.809	
6,500.0	6,485.4	6,417.7	6,383.3	14.3	16.9	168.64	248.5	493.1	747.3	719.2	28.07	26.619	
6,518.7	6,503.7	6,435.3	6,400.7	14.4	16.9	168.76	248.9	495.6	753.6	725.5	28.15	26.768	
6,550.0	6,534.2	6,464.5	6,429.6	14.5	17.0	-178.11	249.6	499.7	764.6	736.5	28.14	27.168	
6,600.0	6,582.4	6,495.1	6,459.9	14.6	17.2	-162.65	250.4	504.1	784.3	756.2	28.08	27.934	
6,650.0	6,629.7	6,500.0	6,464.7	14.8	17.2	-151.66	250.6	504.9	807.6	779.7	27.95	28.898	
6,700.0	6,675.7	6,531.8	6,495.9	15.0	17.3	-143.60	252.5	510.6	833.6	805.7	27.93	29.851	
6,750.0	6,720.0	6,550.0	6,513.6	15.2	17.4	-136.80	254.2	514.5	862.8	834.8	27.95	30.873	
6,800.0	6,762.3	6,550.0	6,513.6	15.4	17.4	-130.07	254.2	514.5	894.7	866.6	28.08	31.868	
6,850.0	6,802.3	6,574.9	6,537.6	15.6	17.5	-124.52	257.2	520.4	928.5	900.1	28.39	32.703	
6,900.0	6,839.6	6,600.0	6,561.5	15.9	17.6	-119.24	260.9	527.1	964.6	935.8	28.86	33.419	
6,950.0	6,874.0	6,600.0	6,561.5	16.2	17.6	-112.50	260.9	527.1	1,001.8	972.2	29.56	33.886	
7,000.0	6,905.3	6,600.0	6,561.5	16.5	17.6	-105.45	260.9	527.1	1,040.4	1,010.0	30.41	34.219	
7,050.0	6,933.1	6,600.0	6,561.5	16.9	17.6	-98.18	260.9	527.1	1,080.1	1,048.8	31.27	34.544	
7,064.4	6,940.5	6,600.0	6,561.5	17.0	17.6	-96.06	260.9	527.1	1,091.6	1,060.1	31.50	34.658	
7,100.0	6,958.3	6,600.0	6,561.5	17.3	17.6	-96.06	260.9	527.1	1,120.4	1,088.6	31.79	35.242	
7,200.0	7,008.3	6,620.8	6,581.1	18.1	17.7	-97.70	264.6	533.2	1,202.7	1,170.0	32.66	36.824	
7,214.4	7,015.5	6,621.9	6,582.1	18.3	17.7	-97.79	264.8	533.6	1,214.8	1,182.0	32.80	37.040	
7,250.0	7,032.4	6,624.4	6,584.4	18.6	17.7	-92.03	265.2	534.3	1,244.6	1,211.2	33.38	37.281	
7,300.0	7,053.2	6,626.8	6,586.7	19.1	17.7	-84.57	265.7	535.1	1,286.2	1,252.3	33.91	37.925	
7,350.0	7,070.3	6,628.2	6,587.9	19.7	17.8	-77.95	266.0	535.5	1,327.2	1,293.1	34.11	38.909	
7,400.0	7,083.6	6,628.5	6,588.2	20.2	17.8	-72.17	266.0	535.6	1,367.3	1,333.3	34.03	40.181	
7,450.0	7,093.0	6,627.9	6,587.6	20.8	17.8	-67.23	265.9	535.4	1,406.3	1,372.6	33.75	41.666	
7,500.0	7,098.5	6,626.3	6,586.2	21.4	17.7	-63.06	265.6	534.9	1,444.1	1,410.7	33.37	43.278	
7,543.0	7,100.0	6,624.3	6,584.3	22.0	17.7	-60.04	265.2	534.3	1,475.4	1,442.4	33.01	44.699	
7,600.0	7,100.0	6,621.2	6,581.5	22.7	17.7	-59.87	264.6	533.4	1,516.6	1,483.0	33.61	45.129	
7,700.0	7,100.0	6,600.0	6,561.5	24.0	17.6	-58.75	260.9	527.1	1,591.5	1,557.0	34.48	46.153	
7,800.0	7,100.0	6,600.0	6,561.5	25.4	17.6	-58.75	260.9	527.1	1,668.6	1,632.9	35.71	46.726	
7,900.0	7,100.0	6,600.0	6,561.5	26.9	17.6	-58.75	260.9	527.1	1,748.0	1,711.0	37.00	47.248	
8,000.0	7,100.0	6,600.0	6,561.5	28.4	17.6	-58.75	260.9	527.1	1,829.4	1,791.1	38.33	47.726	
8,100.0	7,100.0	6,600.0	6,561.5	30.0	17.6	-58.75	260.9	527.1	1,912.6	1,872.9	39.71	48.165	
8,200.0	7,100.0	6,600.0	6,561.5	31.6	17.6	-58.75	260.9	527.1	1,997.4	1,956.2	41.12	48.571	
8,300.0	7,100.0	6,600.0	6,561.5	33.2	17.6	-58.75	260.9	527.1	2,083.5	2,040.9	42.57	48.946	
8,400.0	7,100.0	6,600.0	6,561.5	34.9	17.6	-58.75	260.9	527.1	2,170.7	2,126.7	44.04	49.295	
8,500.0	7,100.0	6,600.0	6,561.5	36.6	17.6	-58.75	260.9	527.1	2,259.1	2,213.5	45.53	49.620	
8,600.0	7,100.0	6,600.0	6,561.5	38.3	17.6	-58.75	260.9	527.1	2,348.3	2,301.3	47.04	49.923	
8,700.0	7,100.0	6,578.8	6,541.3	40.1	17.5	-57.64	257.7	521.4	2,438.0	2,389.9	48.12	50.669	
8,800.0	7,100.0	6,576.0	6,538.7	41.8	17.5	-57.50	257.3	520.7	2,528.7	2,479.1	49.58	51.002	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 3-8H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,100.0	6,573.4	6,536.1	43.6	17.5	-57.36	257.0	520.0	2,620.1	2,569.0	51.06	51.317	
9,000.0	7,100.0	6,570.8	6,533.7	45.4	17.5	-57.23	256.7	519.4	2,712.1	2,659.5	52.54	51.616	
9,100.0	7,100.0	6,550.0	6,513.6	47.2	17.4	-56.17	254.2	514.5	2,804.9	2,751.3	53.59	52.345	
9,200.0	7,100.0	6,550.0	6,513.6	49.0	17.4	-56.17	254.2	514.5	2,897.9	2,842.7	55.13	52.562	
9,300.0	7,100.0	6,550.0	6,513.6	50.8	17.4	-56.17	254.2	514.5	2,991.2	2,934.6	56.69	52.767	
9,400.0	7,100.0	6,550.0	6,513.6	52.6	17.4	-56.17	254.2	514.5	3,085.0	3,026.8	58.25	52.963	
9,500.0	7,100.0	6,550.0	6,513.6	54.4	17.4	-56.17	254.2	514.5	3,179.2	3,119.4	59.82	53.149	
9,600.0	7,100.0	6,550.0	6,513.6	56.3	17.4	-56.17	254.2	514.5	3,273.7	3,212.3	61.39	53.326	
9,700.0	7,100.0	6,550.0	6,513.6	58.1	17.4	-56.17	254.2	514.5	3,368.6	3,305.6	62.97	53.495	
9,800.0	7,100.0	6,550.0	6,513.6	59.9	17.4	-56.17	254.2	514.5	3,463.7	3,399.2	64.55	53.656	
9,900.0	7,100.0	6,550.0	6,513.6	61.8	17.4	-56.17	254.2	514.5	3,559.1	3,493.0	66.14	53.810	
10,000.0	7,100.0	6,550.0	6,513.6	63.7	17.4	-56.17	254.2	514.5	3,654.7	3,587.0	67.73	53.958	
10,100.0	7,100.0	6,550.0	6,513.6	65.5	17.4	-56.17	254.2	514.5	3,750.6	3,681.3	69.33	54.099	
10,200.0	7,100.0	6,550.0	6,513.6	67.4	17.4	-56.17	254.2	514.5	3,846.7	3,775.8	70.93	54.234	
10,300.0	7,100.0	6,550.0	6,513.6	69.2	17.4	-56.17	254.2	514.5	3,943.0	3,870.4	72.53	54.364	
10,400.0	7,100.0	6,550.0	6,513.6	71.1	17.4	-56.17	254.2	514.5	4,039.4	3,965.3	74.13	54.488	
10,500.0	7,100.0	6,550.0	6,513.6	73.0	17.4	-56.17	254.2	514.5	4,136.0	4,060.3	75.74	54.608	
10,600.0	7,100.0	6,550.0	6,513.6	74.9	17.4	-56.17	254.2	514.5	4,232.8	4,155.5	77.35	54.723	
10,700.0	7,100.0	6,550.0	6,513.6	76.7	17.4	-56.17	254.2	514.5	4,329.8	4,250.8	78.96	54.834	
10,800.0	7,100.0	6,550.0	6,513.6	78.6	17.4	-56.17	254.2	514.5	4,426.8	4,346.2	80.58	54.940	
10,900.0	7,100.0	6,550.0	6,513.6	80.5	17.4	-56.17	254.2	514.5	4,524.0	4,441.8	82.19	55.043	
11,000.0	7,100.0	6,550.0	6,513.6	82.4	17.4	-56.17	254.2	514.5	4,621.3	4,537.5	83.81	55.142	
11,100.0	7,100.0	6,550.0	6,513.6	84.3	17.4	-56.17	254.2	514.5	4,718.7	4,633.3	85.43	55.237	
11,200.0	7,100.0	6,550.0	6,513.6	86.2	17.4	-56.17	254.2	514.5	4,816.3	4,729.2	87.05	55.329	
11,300.0	7,100.0	6,550.0	6,513.6	88.1	17.4	-56.17	254.2	514.5	4,913.9	4,825.2	88.67	55.419	
11,400.0	7,100.0	6,550.0	6,513.6	90.0	17.4	-56.17	254.2	514.5	5,011.6	4,921.3	90.29	55.505	
11,500.0	7,100.0	6,550.0	6,513.6	91.8	17.4	-56.17	254.2	514.5	5,109.4	5,017.5	91.92	55.588	
11,600.0	7,100.0	6,550.0	6,513.6	93.7	17.4	-56.17	254.2	514.5	5,207.3	5,113.8	93.54	55.668	
11,700.0	7,100.0	6,550.0	6,513.6	95.6	17.4	-56.17	254.2	514.5	5,305.3	5,210.1	95.17	55.746	
11,800.0	7,100.0	6,550.0	6,513.6	97.5	17.4	-56.17	254.2	514.5	5,403.3	5,306.6	96.80	55.822	
11,892.4	7,100.0	6,550.0	6,513.6	99.3	17.4	-56.17	254.2	514.5	5,494.0	5,395.7	98.30	55.889	
11,900.0	7,100.0	6,527.8	6,492.0	99.4	17.3	-54.61	252.2	509.9	5,501.1	5,404.1	97.00	56.712	
11,958.5	7,100.0	6,527.3	6,491.5	100.4	17.3	-50.75	252.2	509.7	5,558.6	5,464.3	94.27	58.964	
12,000.0	7,100.0	6,526.9	6,491.1	101.1	17.3	-50.73	252.2	509.7	5,599.5	5,504.6	94.85	59.035	
12,100.0	7,100.0	6,526.0	6,490.2	103.0	17.3	-50.68	252.1	509.5	5,698.0	5,601.7	96.34	59.147	
12,200.0	7,100.0	6,525.1	6,489.3	104.9	17.3	-50.63	252.0	509.3	5,796.6	5,698.8	97.82	59.256	
12,300.0	7,100.0	6,524.2	6,488.5	106.8	17.3	-50.59	252.0	509.2	5,895.2	5,795.9	99.31	59.363	
12,400.0	7,100.0	6,523.4	6,487.7	108.7	17.3	-50.55	251.9	509.0	5,993.9	5,893.1	100.80	59.466	
12,500.0	7,100.0	6,522.6	6,486.9	110.6	17.3	-50.50	251.8	508.9	6,092.6	5,990.3	102.28	59.566	
12,600.0	7,100.0	6,500.0	6,464.7	112.5	17.2	-49.35	250.6	504.9	6,191.8	6,089.3	102.49	60.413	
12,700.0	7,100.0	6,500.0	6,464.7	114.4	17.2	-49.35	250.6	504.9	6,290.5	6,186.5	104.01	60.483	
12,800.0	7,100.0	6,500.0	6,464.7	116.3	17.2	-49.35	250.6	504.9	6,389.3	6,283.8	105.52	60.550	
12,900.0	7,100.0	6,500.0	6,464.7	118.2	17.2	-49.35	250.6	504.9	6,488.2	6,381.2	107.04	60.616	
13,000.0	7,100.0	6,500.0	6,464.7	120.1	17.2	-49.35	250.6	504.9	6,587.1	6,478.5	108.55	60.680	
13,100.0	7,100.0	6,500.0	6,464.7	122.0	17.2	-49.35	250.6	504.9	6,686.0	6,575.9	110.07	60.742	
13,200.0	7,100.0	6,500.0	6,464.7	123.9	17.2	-49.35	250.6	504.9	6,784.9	6,673.3	111.59	60.802	
13,300.0	7,100.0	6,500.0	6,464.7	125.8	17.2	-49.35	250.6	504.9	6,883.9	6,770.8	113.11	60.861	
13,400.0	7,100.0	6,500.0	6,464.7	127.7	17.2	-49.35	250.6	504.9	6,982.9	6,868.3	114.63	60.918	
13,500.0	7,100.0	6,500.0	6,464.7	129.6	17.2	-49.35	250.6	504.9	7,081.9	6,965.8	116.15	60.974	
13,600.0	7,100.0	6,500.0	6,464.7	131.5	17.2	-49.35	250.6	504.9	7,181.0	7,063.3	117.67	61.029	
13,700.0	7,100.0	6,500.0	6,464.7	133.4	17.2	-49.35	250.6	504.9	7,280.1	7,160.9	119.19	61.082	
13,800.0	7,100.0	6,500.0	6,464.7	135.4	17.2	-49.35	250.6	504.9	7,379.2	7,258.5	120.71	61.133	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 3-8H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,900.0	7,100.0	6,500.0	6,464.7	137.3	17.2	-49.35	250.6	504.9	7,478.3	7,356.1	122.23	61.184	
14,000.0	7,100.0	6,500.0	6,464.7	139.2	17.2	-49.35	250.6	504.9	7,577.5	7,453.7	123.75	61.233	
14,100.0	7,100.0	6,500.0	6,464.7	141.1	17.2	-49.35	250.6	504.9	7,676.7	7,551.4	125.27	61.281	
14,200.0	7,100.0	6,500.0	6,464.7	143.0	17.2	-49.35	250.6	504.9	7,775.9	7,649.1	126.79	61.328	
14,300.0	7,100.0	6,500.0	6,464.7	144.9	17.2	-49.35	250.6	504.9	7,875.1	7,746.8	128.31	61.374	
14,400.0	7,100.0	6,500.0	6,464.7	146.8	17.2	-49.35	250.6	504.9	7,974.3	7,844.5	129.84	61.419	
14,500.0	7,100.0	6,500.0	6,464.7	148.7	17.2	-49.35	250.6	504.9	8,073.6	7,942.2	131.36	61.462	
14,600.0	7,100.0	6,500.0	6,464.7	150.6	17.2	-49.35	250.6	504.9	8,172.9	8,040.0	132.88	61.505	
14,700.0	7,100.0	6,500.0	6,464.7	152.5	17.2	-49.35	250.6	504.9	8,272.2	8,137.8	134.40	61.547	
14,800.0	7,100.0	6,500.0	6,464.7	154.4	17.2	-49.35	250.6	504.9	8,371.5	8,235.6	135.93	61.588	
14,900.0	7,100.0	6,500.0	6,464.7	156.3	17.2	-49.35	250.6	504.9	8,470.8	8,333.4	137.45	61.628	
15,000.0	7,100.0	6,500.0	6,464.7	158.2	17.2	-49.35	250.6	504.9	8,570.1	8,431.2	138.98	61.667	
15,100.0	7,100.0	6,500.0	6,464.7	160.1	17.2	-49.35	250.6	504.9	8,669.5	8,529.0	140.50	61.705	
15,200.0	7,100.0	6,500.0	6,464.7	162.1	17.2	-49.35	250.6	504.9	8,768.9	8,626.9	142.02	61.743	
15,300.0	7,100.0	6,500.0	6,464.7	164.0	17.2	-49.35	250.6	504.9	8,868.3	8,724.7	143.55	61.779	
15,400.0	7,100.0	6,500.0	6,464.7	165.9	17.2	-49.35	250.6	504.9	8,967.7	8,822.6	145.07	61.815	
15,500.0	7,100.0	6,500.0	6,464.7	167.8	17.2	-49.35	250.6	504.9	9,067.1	8,920.5	146.60	61.850	
15,600.0	7,100.0	6,500.0	6,464.7	169.7	17.2	-49.35	250.6	504.9	9,166.5	9,018.4	148.12	61.885	
15,700.0	7,100.0	6,500.0	6,464.7	171.6	17.2	-49.35	250.6	504.9	9,265.9	9,116.3	149.65	61.919	
15,800.0	7,100.0	6,500.0	6,464.7	173.5	17.2	-49.35	250.6	504.9	9,365.4	9,214.2	151.17	61.952	
15,900.0	7,100.0	6,500.0	6,464.7	175.4	17.2	-49.35	250.6	504.9	9,464.9	9,312.2	152.70	61.984	
16,000.0	7,100.0	6,500.0	6,464.7	177.3	17.2	-49.35	250.6	504.9	9,564.3	9,410.1	154.22	62.016	
16,100.0	7,100.0	6,500.0	6,464.7	179.2	17.2	-49.35	250.6	504.9	9,663.8	9,508.1	155.75	62.047	
16,200.0	7,100.0	6,500.0	6,464.7	181.2	17.2	-49.35	250.6	504.9	9,763.3	9,606.0	157.28	62.078	
16,300.0	7,100.0	6,500.0	6,464.7	183.1	17.2	-49.35	250.6	504.9	9,862.8	9,704.0	158.80	62.108	
16,400.0	7,100.0	6,500.0	6,464.7	185.0	17.2	-49.35	250.6	504.9	9,962.3	9,802.0	160.33	62.137	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 4-8H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	8.48	149.7	22.3	151.3				
100.0	100.0	100.0	100.0	0.1	0.1	8.48	149.7	22.3	151.3	151.2	0.19	801.591	
200.0	200.0	200.0	200.0	0.3	0.3	8.48	149.7	22.3	151.3	150.7	0.64	237.091	
300.0	300.0	300.0	300.0	0.5	0.5	8.48	149.7	22.3	151.3	150.3	1.09	139.119	
400.0	400.0	400.0	400.0	0.8	0.8	8.48	149.7	22.3	151.3	149.8	1.54	98.441	
500.0	500.0	500.0	500.0	1.0	1.0	8.48	149.7	22.3	151.3	149.4	1.99	76.169	CC, ES
600.0	600.0	599.2	599.2	1.2	1.2	152.53	149.7	24.0	153.2	150.8	2.40	63.784	
673.0	672.9	672.0	671.9	1.3	1.4	153.95	149.7	26.4	156.7	154.0	2.69	58.190	
700.0	699.8	698.9	698.8	1.4	1.4	154.53	149.7	27.3	158.3	155.5	2.80	56.530	
800.0	799.7	798.5	798.4	1.6	1.6	156.56	149.7	30.6	164.5	161.3	3.21	51.195	
900.0	899.5	898.2	898.0	1.8	1.8	158.43	149.7	33.9	170.9	167.3	3.64	46.979	
1,000.0	999.3	997.8	997.6	2.0	2.1	160.18	149.7	37.2	177.5	173.4	4.07	43.605	
1,100.0	1,099.1	1,097.5	1,097.2	2.3	2.3	161.79	149.7	40.5	184.2	179.7	4.51	40.864	
1,200.0	1,198.9	1,199.2	1,198.9	2.5	2.5	162.89	149.7	42.3	190.6	185.6	4.94	38.616	
1,300.0	1,298.8	1,299.1	1,298.8	2.8	2.7	163.41	149.7	42.3	196.3	191.0	5.35	36.670	
1,328.4	1,327.1	1,327.4	1,327.1	2.8	2.8	163.55	149.7	42.3	198.0	192.5	5.48	36.145	
1,400.0	1,398.6	1,398.9	1,398.6	3.0	2.9	163.85	149.7	42.3	201.3	195.5	5.78	34.810	
1,501.4	1,500.0	1,500.3	1,500.0	3.2	3.1	20.87	149.7	42.3	203.0	196.7	6.31	32.186	
1,600.0	1,598.6	1,598.9	1,598.6	3.4	3.3	20.87	149.7	42.3	203.0	196.3	6.72	30.219	
1,700.0	1,698.6	1,698.9	1,698.6	3.6	3.6	20.87	149.7	42.3	203.0	195.9	7.13	28.457	
1,800.0	1,798.6	1,798.9	1,798.6	3.8	3.8	20.87	149.7	42.3	203.0	195.5	7.55	26.876	
1,900.0	1,898.6	1,898.9	1,898.6	4.0	4.0	20.87	149.7	42.3	203.0	195.0	7.98	25.451	
2,000.0	1,998.6	1,998.9	1,998.6	4.2	4.2	20.87	149.7	42.3	203.0	194.6	8.40	24.162	
2,100.0	2,098.6	2,098.9	2,098.6	4.4	4.4	20.87	149.7	42.3	203.0	194.2	8.83	22.991	
2,200.0	2,198.6	2,198.9	2,198.6	4.6	4.7	20.87	149.7	42.3	203.0	193.7	9.26	21.923	
2,300.0	2,298.6	2,298.9	2,298.6	4.8	4.9	20.87	149.7	42.3	203.0	193.3	9.69	20.946	
2,400.0	2,398.6	2,398.9	2,398.6	5.0	5.1	20.87	149.7	42.3	203.0	192.9	10.12	20.050	
2,500.0	2,498.6	2,498.9	2,498.6	5.2	5.3	20.87	149.7	42.3	203.0	192.4	10.56	19.225	
2,600.0	2,598.6	2,598.9	2,598.6	5.5	5.6	20.87	149.7	42.3	203.0	192.0	11.00	18.463	
2,700.0	2,698.6	2,698.9	2,698.6	5.7	5.8	20.87	149.7	42.3	203.0	191.6	11.43	17.757	
2,800.0	2,798.6	2,798.9	2,798.6	5.9	6.0	20.87	149.7	42.3	203.0	191.1	11.87	17.102	
2,900.0	2,898.6	2,898.9	2,898.6	6.1	6.2	20.87	149.7	42.3	203.0	190.7	12.31	16.493	
3,000.0	2,998.6	2,998.9	2,998.6	6.3	6.4	20.87	149.7	42.3	203.0	190.3	12.75	15.924	
3,100.0	3,098.6	3,098.9	3,098.6	6.5	6.7	20.87	149.7	42.3	203.0	189.8	13.19	15.393	
3,200.0	3,198.6	3,196.4	3,196.1	6.8	6.9	21.30	149.7	43.9	203.6	190.0	13.62	14.953	
3,300.0	3,298.6	3,293.7	3,293.2	7.0	7.1	22.58	149.7	48.9	205.5	191.5	14.04	14.636	
3,400.0	3,398.6	3,390.5	3,389.7	7.2	7.3	24.66	149.7	57.1	208.9	194.4	14.47	14.438	
3,500.0	3,498.6	3,486.7	3,485.2	7.4	7.5	27.42	149.7	68.4	214.1	199.2	14.90	14.368	SF
3,600.0	3,598.6	3,582.0	3,579.4	7.6	7.8	30.74	149.7	82.8	221.5	206.2	15.35	14.436	
3,700.0	3,698.6	3,676.2	3,672.0	7.9	8.0	34.45	149.7	100.1	231.6	215.8	15.80	14.653	
3,800.0	3,798.6	3,769.2	3,762.8	8.1	8.3	38.38	149.7	120.2	244.6	228.3	16.28	15.023	
3,900.0	3,898.6	3,860.8	3,851.6	8.3	8.6	42.34	149.7	142.8	260.9	244.1	16.78	15.544	
4,000.0	3,998.6	3,955.3	3,942.6	8.5	8.9	46.29	149.7	168.4	280.2	262.8	17.33	16.164	
4,100.0	4,098.6	4,051.6	4,035.2	8.7	9.3	49.81	149.7	194.6	300.7	282.8	17.91	16.787	
4,200.0	4,198.6	4,147.8	4,127.8	9.0	9.7	52.89	149.7	220.7	322.2	303.7	18.52	17.401	
4,300.0	4,298.6	4,244.1	4,220.4	9.2	10.1	55.58	149.7	246.9	344.6	325.4	19.15	17.998	
4,400.0	4,398.6	4,340.3	4,313.0	9.4	10.5	57.95	149.7	273.0	367.6	347.8	19.79	18.574	
4,500.0	4,498.6	4,436.5	4,405.7	9.6	10.9	60.04	149.7	299.1	391.1	370.6	20.45	19.125	
4,600.0	4,598.6	4,532.8	4,498.3	9.8	11.4	61.90	149.7	325.3	415.1	393.9	21.12	19.652	
4,700.0	4,698.6	4,629.0	4,590.9	10.1	11.8	63.56	149.7	351.4	439.4	417.6	21.80	20.153	
4,800.0	4,798.6	4,725.2	4,683.5	10.3	12.3	65.04	149.7	377.6	464.1	441.6	22.50	20.630	
4,900.0	4,898.6	4,821.5	4,776.1	10.5	12.8	66.38	149.7	403.7	489.0	465.8	23.19	21.082	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 4-8H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.6	4,917.7	4,868.8	10.7	13.2	67.59	149.7	429.9	514.1	490.2	23.90	21.511	
5,100.0	5,098.6	5,014.0	4,961.4	10.9	13.7	68.68	149.7	456.0	539.5	514.9	24.61	21.919	
5,200.0	5,198.6	5,110.2	5,054.0	11.2	14.2	69.68	149.7	482.2	565.0	539.7	25.33	22.306	
5,300.0	5,298.6	5,206.4	5,146.6	11.4	14.7	70.59	149.7	508.3	590.7	564.6	26.05	22.673	
5,400.0	5,398.6	5,302.7	5,239.2	11.6	15.2	71.43	149.7	534.5	616.5	589.7	26.78	23.022	
5,500.7	5,499.3	5,399.6	5,332.5	11.8	15.7	72.20	149.7	560.8	642.5	615.0	27.51	23.356	
5,600.0	5,598.6	5,494.7	5,424.0	12.1	16.2	178.35	149.7	586.7	670.0	645.3	24.69	27.141	
5,700.0	5,698.4	5,589.4	5,515.2	12.3	16.7	179.00	149.7	612.4	701.1	676.0	25.08	27.956	
5,800.0	5,798.1	5,683.0	5,605.3	12.5	17.2	179.60	149.7	637.8	735.6	710.1	25.45	28.904	
5,900.0	5,897.3	5,775.3	5,694.1	12.7	17.7	-179.85	149.7	662.9	773.4	747.6	25.80	29.980	
6,000.0	5,996.1	5,866.3	5,781.7	12.9	18.2	-179.34	149.7	687.6	814.4	788.3	26.12	31.179	
6,104.3	6,098.5	5,959.6	5,871.5	13.2	18.7	-178.86	149.7	713.0	860.6	834.2	26.43	32.558	
6,200.0	6,192.0	6,044.4	5,953.1	13.5	19.1	-178.47	149.7	736.0	904.6	877.8	26.85	33.695	
6,300.0	6,289.8	6,133.1	6,038.4	13.7	19.6	-178.11	149.7	760.1	950.6	923.4	27.28	34.844	
6,400.0	6,387.6	6,221.7	6,123.7	14.0	20.1	-177.78	149.7	784.2	996.7	969.0	27.72	35.951	
6,500.0	6,485.4	6,310.3	6,209.0	14.3	20.6	-177.48	149.7	808.3	1,042.7	1,014.6	28.17	37.021	
6,518.7	6,503.7	6,326.9	6,224.9	14.4	20.7	-177.43	149.7	812.8	1,051.4	1,023.1	28.25	37.217	
6,550.0	6,534.2	6,354.5	6,251.5	14.5	20.8	-163.81	149.7	820.3	1,066.0	1,037.8	28.22	37.770	
6,600.0	6,582.4	6,398.1	6,293.4	14.6	21.1	-147.63	149.7	832.1	1,090.5	1,062.3	28.22	38.641	
6,650.0	6,629.7	6,440.6	6,334.3	14.8	21.3	-136.40	149.7	843.7	1,116.0	1,087.7	28.29	39.453	
6,700.0	6,675.7	6,481.7	6,373.9	15.0	21.5	-128.17	149.7	854.8	1,142.5	1,114.1	28.44	40.175	
6,750.0	6,720.0	6,521.2	6,411.9	15.2	21.7	-121.72	149.7	865.6	1,169.9	1,141.2	28.68	40.784	
6,800.0	6,762.3	6,550.0	6,439.6	15.4	21.9	-116.16	149.7	873.4	1,198.0	1,169.0	29.02	41.282	
6,850.0	6,802.3	6,550.0	6,439.6	15.6	21.9	-110.35	149.7	873.4	1,227.6	1,198.2	29.47	41.663	
6,900.0	6,839.6	6,571.3	6,460.0	15.9	22.0	-105.56	149.8	879.7	1,258.1	1,228.1	30.04	41.888	
6,950.0	6,874.0	6,580.2	6,468.4	16.2	22.1	-100.57	149.9	882.5	1,289.7	1,259.0	30.68	42.033	
7,000.0	6,905.3	6,600.0	6,487.0	16.5	22.2	-96.25	150.2	889.3	1,322.2	1,290.8	31.35	42.175	
7,050.0	6,933.1	6,600.0	6,487.0	16.9	22.2	-91.22	150.2	889.3	1,354.9	1,322.9	32.00	42.339	
7,064.4	6,940.5	6,600.0	6,487.0	17.0	22.2	-89.79	150.2	889.3	1,364.4	1,332.2	32.17	42.408	
7,100.0	6,958.3	6,600.0	6,487.0	17.3	22.2	-89.79	150.2	889.3	1,388.1	1,355.6	32.47	42.747	
7,200.0	7,008.3	6,600.0	6,487.0	18.1	22.2	-89.79	150.2	889.3	1,457.4	1,424.0	33.39	43.641	
7,214.4	7,015.5	6,600.0	6,487.0	18.3	22.2	-89.79	150.2	889.3	1,467.7	1,434.2	33.54	43.764	
7,250.0	7,032.4	6,600.0	6,487.0	18.6	22.2	-85.77	150.2	889.3	1,493.0	1,459.1	33.90	44.038	
7,300.0	7,053.2	6,619.6	6,505.2	19.1	22.4	-81.61	150.7	896.7	1,527.5	1,493.2	34.30	44.530	
7,350.0	7,070.3	6,622.8	6,508.1	19.7	22.4	-77.23	150.8	897.9	1,561.4	1,526.9	34.50	45.254	
7,400.0	7,083.6	6,625.1	6,510.2	20.2	22.4	-73.38	150.9	898.9	1,594.2	1,559.6	34.57	46.119	
7,450.0	7,093.0	6,626.6	6,511.6	20.8	22.4	-70.02	150.9	899.4	1,625.8	1,591.2	34.54	47.066	
7,500.0	7,098.5	6,627.2	6,512.2	21.4	22.4	-67.13	150.9	899.7	1,655.9	1,621.5	34.48	48.026	
7,543.0	7,100.0	6,627.1	6,512.1	22.0	22.4	-65.00	150.9	899.7	1,680.7	1,646.2	34.43	48.809	
7,600.0	7,100.0	6,626.6	6,511.6	22.7	22.4	-64.98	150.9	899.5	1,713.3	1,678.2	35.10	48.811	
7,700.0	7,100.0	6,625.7	6,510.8	24.0	22.4	-64.95	150.9	899.1	1,773.5	1,737.2	36.32	48.824	
7,800.0	7,100.0	6,624.9	6,510.0	25.4	22.4	-64.91	150.9	898.8	1,837.2	1,799.6	37.62	48.836	
7,900.0	7,100.0	6,624.0	6,509.2	26.9	22.4	-64.87	150.8	898.4	1,904.0	1,865.1	38.98	48.852	
8,000.0	7,100.0	6,623.2	6,508.4	28.4	22.4	-64.84	150.8	898.1	1,973.7	1,933.3	40.38	48.877	
8,100.0	7,100.0	6,622.3	6,507.7	30.0	22.4	-64.81	150.8	897.8	2,045.8	2,004.0	41.83	48.910	
8,200.0	7,100.0	6,621.5	6,507.0	31.6	22.4	-64.77	150.8	897.4	2,120.2	2,076.9	43.31	48.954	
8,300.0	7,100.0	6,620.8	6,506.2	33.2	22.4	-64.74	150.7	897.1	2,196.6	2,151.8	44.82	49.008	
8,400.0	7,100.0	6,620.0	6,505.5	34.9	22.4	-64.71	150.7	896.8	2,274.9	2,228.5	46.36	49.070	
8,500.0	7,100.0	6,619.2	6,504.8	36.6	22.4	-64.68	150.7	896.5	2,354.8	2,306.9	47.92	49.140	
8,600.0	7,100.0	6,600.0	6,487.0	38.3	22.2	-63.89	150.2	889.3	2,436.5	2,387.2	49.23	49.493	
8,700.0	7,100.0	6,600.0	6,487.0	40.1	22.2	-63.89	150.2	889.3	2,519.2	2,468.4	50.83	49.565	
8,800.0	7,100.0	6,600.0	6,487.0	41.8	22.2	-63.89	150.2	889.3	2,603.1	2,550.7	52.44	49.642	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 4-8H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.0	7,100.0	6,600.0	6,487.0	43.6	22.2	-63.89	150.2	889.3	2,688.1	2,634.1	54.06	49.723	
9,000.0	7,100.0	6,600.0	6,487.0	45.4	22.2	-63.89	150.2	889.3	2,774.1	2,718.4	55.70	49.807	
9,100.0	7,100.0	6,600.0	6,487.0	47.2	22.2	-63.89	150.2	889.3	2,861.1	2,803.7	57.34	49.894	
9,200.0	7,100.0	6,600.0	6,487.0	49.0	22.2	-63.89	150.2	889.3	2,948.8	2,889.8	59.00	49.982	
9,300.0	7,100.0	6,600.0	6,487.0	50.8	22.2	-63.89	150.2	889.3	3,037.3	2,976.7	60.66	50.071	
9,400.0	7,100.0	6,600.0	6,487.0	52.6	22.2	-63.89	150.2	889.3	3,126.5	3,064.2	62.33	50.161	
9,500.0	7,100.0	6,600.0	6,487.0	54.4	22.2	-63.89	150.2	889.3	3,216.4	3,152.4	64.01	50.251	
9,600.0	7,100.0	6,600.0	6,487.0	56.3	22.2	-63.89	150.2	889.3	3,306.8	3,241.1	65.69	50.341	
9,700.0	7,100.0	6,600.0	6,487.0	58.1	22.2	-63.89	150.2	889.3	3,397.7	3,330.4	67.37	50.430	
9,800.0	7,100.0	6,600.0	6,487.0	59.9	22.2	-63.89	150.2	889.3	3,489.2	3,420.1	69.07	50.519	
9,900.0	7,100.0	6,600.0	6,487.0	61.8	22.2	-63.89	150.2	889.3	3,581.1	3,510.3	70.76	50.607	
10,000.0	7,100.0	6,600.0	6,487.0	63.7	22.2	-63.89	150.2	889.3	3,673.4	3,601.0	72.46	50.694	
10,100.0	7,100.0	6,600.0	6,487.0	65.5	22.2	-63.89	150.2	889.3	3,766.2	3,692.0	74.17	50.780	
10,200.0	7,100.0	6,600.0	6,487.0	67.4	22.2	-63.89	150.2	889.3	3,859.3	3,783.4	75.87	50.865	
10,300.0	7,100.0	6,600.0	6,487.0	69.2	22.2	-63.89	150.2	889.3	3,952.7	3,875.1	77.58	50.948	
10,400.0	7,100.0	6,600.0	6,487.0	71.1	22.2	-63.89	150.2	889.3	4,046.4	3,967.1	79.30	51.030	
10,500.0	7,100.0	6,600.0	6,487.0	73.0	22.2	-63.89	150.2	889.3	4,140.5	4,059.4	81.01	51.110	
10,600.0	7,100.0	6,600.0	6,487.0	74.9	22.2	-63.89	150.2	889.3	4,234.8	4,152.0	82.73	51.189	
10,700.0	7,100.0	6,600.0	6,487.0	76.7	22.2	-63.89	150.2	889.3	4,329.3	4,244.9	84.45	51.267	
10,800.0	7,100.0	6,600.0	6,487.0	78.6	22.2	-63.89	150.2	889.3	4,424.1	4,338.0	86.17	51.342	
10,900.0	7,100.0	6,600.0	6,487.0	80.5	22.2	-63.89	150.2	889.3	4,519.1	4,431.3	87.89	51.417	
11,000.0	7,100.0	6,600.0	6,487.0	82.4	22.2	-63.89	150.2	889.3	4,614.4	4,524.8	89.62	51.490	
11,100.0	7,100.0	6,600.0	6,487.0	84.3	22.2	-63.89	150.2	889.3	4,709.8	4,618.5	91.34	51.561	
11,200.0	7,100.0	6,600.0	6,487.0	86.2	22.2	-63.89	150.2	889.3	4,805.4	4,712.4	93.07	51.631	
11,300.0	7,100.0	6,600.0	6,487.0	88.1	22.2	-63.89	150.2	889.3	4,901.2	4,806.4	94.80	51.699	
11,400.0	7,100.0	6,600.0	6,487.0	90.0	22.2	-63.89	150.2	889.3	4,997.2	4,900.7	96.53	51.766	
11,500.0	7,100.0	6,600.0	6,487.0	91.8	22.2	-63.89	150.2	889.3	5,093.3	4,995.0	98.27	51.831	
11,600.0	7,100.0	6,600.0	6,487.0	93.7	22.2	-63.89	150.2	889.3	5,189.6	5,089.6	100.00	51.895	
11,700.0	7,100.0	6,600.0	6,487.0	95.6	22.2	-63.89	150.2	889.3	5,286.0	5,184.2	101.74	51.958	
11,800.0	7,100.0	6,600.0	6,487.0	97.5	22.2	-63.89	150.2	889.3	5,382.5	5,279.0	103.47	52.019	
11,892.4	7,100.0	6,600.0	6,487.0	99.3	22.2	-63.89	150.2	889.3	5,471.8	5,366.7	105.08	52.075	
11,900.0	7,100.0	6,600.0	6,487.0	99.4	22.2	-63.63	150.2	889.3	5,479.2	5,374.1	105.03	52.166	
11,958.5	7,100.0	6,600.0	6,487.0	100.4	22.2	-61.47	150.2	889.3	5,535.9	5,431.5	104.43	53.012	
12,000.0	7,100.0	6,600.0	6,487.0	101.1	22.2	-61.47	150.2	889.3	5,576.3	5,471.2	105.09	53.062	
12,100.0	7,100.0	6,600.0	6,487.0	103.0	22.2	-61.47	150.2	889.3	5,673.7	5,566.9	106.79	53.129	
12,200.0	7,100.0	6,600.0	6,487.0	104.9	22.2	-61.47	150.2	889.3	5,771.1	5,662.6	108.49	53.194	
12,300.0	7,100.0	6,600.0	6,487.0	106.8	22.2	-61.47	150.2	889.3	5,868.6	5,758.5	110.19	53.258	
12,400.0	7,100.0	6,600.0	6,487.0	108.7	22.2	-61.47	150.2	889.3	5,966.3	5,854.4	111.90	53.320	
12,500.0	7,100.0	6,600.0	6,487.0	110.6	22.2	-61.47	150.2	889.3	6,064.0	5,950.4	113.60	53.380	
12,600.0	7,100.0	6,600.0	6,487.0	112.5	22.2	-61.47	150.2	889.3	6,161.7	6,046.4	115.30	53.439	
12,700.0	7,100.0	6,600.0	6,487.0	114.4	22.2	-61.47	150.2	889.3	6,259.6	6,142.6	117.01	53.497	
12,800.0	7,100.0	6,600.0	6,487.0	116.3	22.2	-61.47	150.2	889.3	6,357.5	6,238.8	118.71	53.553	
12,900.0	7,100.0	6,600.0	6,487.0	118.2	22.2	-61.47	150.2	889.3	6,455.5	6,335.0	120.42	53.608	
13,000.0	7,100.0	6,600.0	6,487.0	120.1	22.2	-61.47	150.2	889.3	6,553.5	6,431.4	122.13	53.662	
13,100.0	7,100.0	6,600.0	6,487.0	122.0	22.2	-61.47	150.2	889.3	6,651.6	6,527.8	123.83	53.714	
13,200.0	7,100.0	6,600.0	6,487.0	123.9	22.2	-61.47	150.2	889.3	6,749.7	6,624.2	125.54	53.765	
13,300.0	7,100.0	6,600.0	6,487.0	125.8	22.2	-61.47	150.2	889.3	6,847.9	6,720.7	127.25	53.815	
13,400.0	7,100.0	6,600.0	6,487.0	127.7	22.2	-61.47	150.2	889.3	6,946.2	6,817.2	128.96	53.864	
13,500.0	7,100.0	6,600.0	6,487.0	129.6	22.2	-61.47	150.2	889.3	7,044.5	6,913.8	130.67	53.912	
13,600.0	7,100.0	6,600.0	6,487.0	131.5	22.2	-61.47	150.2	889.3	7,142.8	7,010.5	132.37	53.959	
13,700.0	7,100.0	6,600.0	6,487.0	133.4	22.2	-61.47	150.2	889.3	7,241.2	7,107.2	134.08	54.005	
13,800.0	7,100.0	6,600.0	6,487.0	135.4	22.2	-61.47	150.2	889.3	7,339.7	7,203.9	135.79	54.050	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 0780 4-8H - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,900.0	7,100.0	6,600.0	6,487.0	137.3	22.2	-61.47	150.2	889.3	7,438.2	7,300.7	137.50	54.094	
14,000.0	7,100.0	6,600.0	6,487.0	139.2	22.2	-61.47	150.2	889.3	7,536.7	7,397.5	139.21	54.137	
14,100.0	7,100.0	6,600.0	6,487.0	141.1	22.2	-61.47	150.2	889.3	7,635.2	7,494.3	140.93	54.179	
14,200.0	7,100.0	6,600.0	6,487.0	143.0	22.2	-61.47	150.2	889.3	7,733.8	7,591.2	142.64	54.221	
14,300.0	7,100.0	6,600.0	6,487.0	144.9	22.2	-61.47	150.2	889.3	7,832.5	7,688.1	144.35	54.261	
14,400.0	7,100.0	6,600.0	6,487.0	146.8	22.2	-61.47	150.2	889.3	7,931.1	7,785.1	146.06	54.301	
14,500.0	7,100.0	6,600.0	6,487.0	148.7	22.2	-61.47	150.2	889.3	8,029.8	7,882.1	147.77	54.340	
14,600.0	7,100.0	6,600.0	6,487.0	150.6	22.2	-61.47	150.2	889.3	8,128.6	7,979.1	149.48	54.378	
14,700.0	7,100.0	6,600.0	6,487.0	152.5	22.2	-61.47	150.2	889.3	8,227.3	8,076.1	151.20	54.415	
14,800.0	7,100.0	6,600.0	6,487.0	154.4	22.2	-61.47	150.2	889.3	8,326.1	8,173.2	152.91	54.452	
14,900.0	7,100.0	6,600.0	6,487.0	156.3	22.2	-61.47	150.2	889.3	8,424.9	8,270.3	154.62	54.487	
15,000.0	7,100.0	6,600.0	6,487.0	158.2	22.2	-61.47	150.2	889.3	8,523.8	8,367.4	156.33	54.523	
15,100.0	7,100.0	6,600.0	6,487.0	160.1	22.2	-61.47	150.2	889.3	8,622.7	8,464.6	158.05	54.557	
15,200.0	7,100.0	6,600.0	6,487.0	162.1	22.2	-61.47	150.2	889.3	8,721.6	8,561.8	159.76	54.591	
15,300.0	7,100.0	6,600.0	6,487.0	164.0	22.2	-61.47	150.2	889.3	8,820.5	8,659.0	161.48	54.624	
15,400.0	7,100.0	6,600.0	6,487.0	165.9	22.2	-61.47	150.2	889.3	8,919.4	8,756.2	163.19	54.657	
15,500.0	7,100.0	6,600.0	6,487.0	167.8	22.2	-61.47	150.2	889.3	9,018.4	8,853.5	164.90	54.689	
15,600.0	7,100.0	6,600.0	6,487.0	169.7	22.2	-61.47	150.2	889.3	9,117.4	8,950.8	166.62	54.720	
15,700.0	7,100.0	6,600.0	6,487.0	171.6	22.2	-61.47	150.2	889.3	9,216.4	9,048.1	168.33	54.751	
15,800.0	7,100.0	6,600.0	6,487.0	173.5	22.2	-61.47	150.2	889.3	9,315.4	9,145.4	170.05	54.781	
15,900.0	7,100.0	6,600.0	6,487.0	175.4	22.2	-61.47	150.2	889.3	9,414.5	9,242.7	171.76	54.811	
16,000.0	7,100.0	6,600.0	6,487.0	177.3	22.2	-61.47	150.2	889.3	9,513.6	9,340.1	173.48	54.841	
16,100.0	7,100.0	6,600.0	6,487.0	179.2	22.2	-61.47	150.2	889.3	9,612.7	9,437.5	175.19	54.869	
16,200.0	7,100.0	6,600.0	6,487.0	181.2	22.2	-61.47	150.2	889.3	9,711.8	9,534.9	176.91	54.897	
16,300.0	7,100.0	6,600.0	6,487.0	183.1	22.2	-61.47	150.2	889.3	9,810.9	9,632.3	178.62	54.925	
16,400.0	7,100.0	6,600.0	6,487.0	185.0	22.2	-61.47	150.2	889.3	9,910.1	9,729.7	180.34	54.953	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 7-17H - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 1031-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-105.23	-83.8	-307.9	319.1				
100.0	100.0	104.5	104.5	0.1	0.1	-105.24	-83.8	-307.6	318.8	318.6	0.22	1,480.206	
200.0	200.0	206.0	206.0	0.3	0.2	-105.25	-83.7	-306.9	318.1	317.6	0.56	570.496	
300.0	300.0	307.4	307.4	0.5	0.4	-105.28	-83.5	-305.7	317.0	316.1	0.90	352.234	
400.0	400.0	408.9	408.8	0.8	0.5	-105.32	-83.3	-304.1	315.3	314.1	1.24	253.878	
500.0	500.0	510.3	510.2	1.0	0.6	-105.37	-83.0	-302.0	313.3	311.7	1.58	197.724	
600.0	600.0	611.6	611.6	1.2	0.7	37.95	-82.6	-299.4	309.3	307.4	1.89	164.070	
673.0	672.9	685.5	685.4	1.3	0.8	38.36	-82.3	-297.2	304.5	302.3	2.11	144.317	
700.0	699.8	712.7	712.6	1.4	0.8	38.54	-82.2	-296.4	302.3	300.1	2.19	137.868	
800.0	799.7	813.7	813.5	1.6	1.0	39.20	-81.7	-292.9	294.2	291.6	2.51	117.227	
900.0	899.5	914.6	914.4	1.8	1.1	39.89	-81.2	-288.9	285.6	282.7	2.84	100.716	
1,000.0	999.3	1,015.5	1,015.1	2.0	1.2	40.61	-80.6	-284.5	276.6	273.4	3.17	87.292	
1,100.0	1,099.1	1,096.8	1,096.3	2.3	1.3	40.75	-83.0	-283.5	271.3	267.8	3.52	77.076	
1,200.0	1,198.9	1,198.2	1,197.7	2.5	1.5	40.79	-87.1	-284.5	268.6	264.6	3.96	67.885	
1,300.0	1,298.8	1,299.5	1,298.9	2.8	1.7	41.15	-89.7	-285.3	265.3	260.9	4.40	60.259	
1,328.4	1,327.1	1,328.0	1,327.4	2.8	1.8	41.32	-90.1	-285.5	264.3	259.8	4.53	58.358	
1,400.0	1,398.6	1,399.5	1,398.9	3.0	2.0	41.67	-90.7	-286.1	262.4	257.6	4.83	54.338	
1,457.0	1,455.6	1,456.1	1,455.5	3.1	2.1	41.80	-91.2	-286.6	262.0	256.9	5.06	51.795	
1,501.4	1,500.0	1,500.2	1,499.6	3.2	2.1	-101.36	-91.7	-287.1	262.3	257.0	5.24	50.008	
1,600.0	1,598.6	1,596.3	1,595.7	3.4	2.3	-101.58	-93.0	-288.5	263.9	258.3	5.62	46.924	
1,700.0	1,698.6	1,692.9	1,692.3	3.6	2.5	-101.83	-94.7	-291.0	266.8	260.8	6.01	44.396	
1,800.0	1,798.6	1,797.9	1,797.2	3.8	2.7	-102.08	-96.4	-293.6	269.6	263.2	6.44	41.895	
1,900.0	1,898.6	1,902.2	1,901.5	4.0	2.9	-102.13	-96.8	-294.2	270.3	263.4	6.87	39.347	
2,000.0	1,998.6	2,002.6	2,001.8	4.2	3.2	-102.15	-96.9	-294.2	270.2	262.9	7.29	37.065	
2,100.0	2,098.6	2,102.3	2,101.6	4.4	3.4	-102.16	-96.9	-294.1	270.2	262.5	7.71	35.049	
2,200.0	2,198.6	2,202.3	2,201.6	4.6	3.6	-102.16	-96.9	-294.1	270.2	262.1	8.13	33.214	
2,300.0	2,298.6	2,302.3	2,301.6	4.8	3.8	-102.16	-96.9	-294.1	270.2	261.6	8.55	31.584	
2,400.0	2,398.6	2,402.4	2,401.7	5.0	4.0	-102.14	-96.8	-294.1	270.2	261.2	8.98	30.099	
2,500.0	2,498.6	2,502.3	2,501.6	5.2	4.2	-102.13	-96.8	-294.1	270.1	260.7	9.40	28.739	
2,600.0	2,598.6	2,602.4	2,601.6	5.5	4.4	-102.10	-96.6	-294.1	270.1	260.3	9.83	27.487	
2,700.0	2,698.6	2,702.3	2,701.6	5.7	4.6	-102.09	-96.6	-294.1	270.1	259.9	10.26	26.331	
2,800.0	2,798.6	2,802.3	2,801.6	5.9	4.8	-102.09	-96.6	-294.1	270.1	259.4	10.68	25.285	
2,900.0	2,898.6	2,902.3	2,901.6	6.1	5.0	-102.09	-96.6	-294.1	270.1	259.0	11.11	24.321	
3,000.0	2,998.6	3,002.3	3,001.6	6.3	5.2	-102.09	-96.6	-294.1	270.1	258.6	11.53	23.426	
3,100.0	3,098.6	3,102.3	3,101.6	6.5	5.5	-102.09	-96.6	-294.1	270.1	258.2	11.96	22.584	
3,200.0	3,198.6	3,202.3	3,201.6	6.8	5.7	-102.09	-96.6	-294.1	270.1	257.7	12.39	21.798	
3,300.0	3,298.6	3,302.3	3,301.6	7.0	5.9	-102.09	-96.6	-294.1	270.1	257.3	12.82	21.077	
3,400.0	3,398.6	3,402.3	3,401.6	7.2	6.1	-102.09	-96.6	-294.1	270.1	256.9	13.24	20.403	
3,500.0	3,498.6	3,502.3	3,501.6	7.4	6.3	-102.09	-96.6	-294.1	270.1	256.5	13.67	19.765	
3,600.0	3,598.6	3,602.3	3,601.6	7.6	6.5	-102.09	-96.6	-294.1	270.1	256.0	14.09	19.165	
3,700.0	3,698.6	3,702.3	3,701.6	7.9	6.7	-102.09	-96.6	-294.1	270.1	255.6	14.53	18.595	
3,800.0	3,798.6	3,802.4	3,801.7	8.1	6.9	-102.08	-96.5	-294.1	270.1	255.1	14.96	18.052	
3,900.0	3,898.6	3,902.3	3,901.6	8.3	7.1	-102.06	-96.4	-294.1	270.1	254.7	15.40	17.540	
4,000.0	3,998.6	4,002.3	4,001.6	8.5	7.3	-102.06	-96.4	-294.1	270.1	254.3	15.83	17.064	
4,100.0	4,098.6	4,102.3	4,101.6	8.7	7.5	-102.06	-96.4	-294.1	270.1	253.8	16.26	16.611	
4,159.2	4,157.8	4,161.5	4,160.8	8.9	7.7	-102.06	-96.4	-294.1	270.1	253.6	16.52	16.352	
4,200.0	4,198.6	4,202.3	4,201.5	9.0	7.8	-102.06	-96.4	-294.1	270.1	253.4	16.69	16.178	
4,300.0	4,298.6	4,302.1	4,301.4	9.2	8.0	-102.04	-96.4	-294.2	270.2	253.0	17.13	15.775	
4,400.0	4,398.6	4,402.3	4,401.6	9.4	8.2	-102.03	-96.3	-294.3	270.2	252.6	17.55	15.393	
4,448.5	4,447.1	4,450.8	4,450.1	9.5	8.3	-102.03	-96.3	-294.3	270.2	252.4	17.76	15.214	
4,500.0	4,498.6	4,502.2	4,501.5	9.6	8.4	-102.03	-96.3	-294.3	270.2	252.2	17.98	15.027	
4,600.0	4,598.6	4,602.2	4,601.5	9.8	8.6	-102.01	-96.2	-294.3	270.2	251.8	18.41	14.677	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 7-17H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 1031-Sperry MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,700.0	4,698.6	4,702.3	4,701.6	10.1	8.8	-102.00	-96.2	-294.4	270.3	251.4	18.84	14.342	
4,800.0	4,798.6	4,802.3	4,801.6	10.3	9.0	-102.00	-96.2	-294.4	270.3	251.0	19.28	14.020	
4,900.0	4,898.6	4,902.3	4,901.6	10.5	9.2	-102.00	-96.2	-294.4	270.3	250.5	19.71	13.709	
5,000.0	4,998.6	5,002.3	5,001.6	10.7	9.4	-102.00	-96.2	-294.4	270.3	250.1	20.15	13.412	
5,100.0	5,098.6	5,102.3	5,101.6	10.9	9.7	-102.00	-96.2	-294.4	270.3	249.7	20.59	13.128	
5,200.0	5,198.6	5,202.3	5,201.6	11.2	9.9	-102.00	-96.2	-294.4	270.3	249.2	21.02	12.856	
5,300.0	5,298.6	5,302.3	5,301.6	11.4	10.1	-102.00	-96.2	-294.4	270.3	248.8	21.46	12.595	
5,400.0	5,398.6	5,402.3	5,401.6	11.6	10.3	-102.00	-96.2	-294.4	270.3	248.4	21.90	12.342	
5,500.7	5,499.3	5,503.0	5,502.2	11.8	10.5	-101.98	-96.1	-294.4	270.3	247.9	22.34	12.098	
5,600.0	5,598.6	5,602.5	5,601.8	12.1	10.7	3.54	-96.0	-294.4	268.5	245.8	22.73	11.813	
5,700.0	5,698.4	5,702.6	5,701.8	12.3	10.9	3.63	-95.8	-294.3	263.2	240.1	23.12	11.383	
5,800.0	5,798.1	5,802.1	5,801.4	12.5	11.1	3.78	-95.7	-294.2	254.4	230.9	23.50	10.827	
5,900.0	5,897.3	5,900.8	5,900.1	12.7	11.3	4.02	-95.6	-294.2	242.3	218.4	23.86	10.156	
6,000.0	5,996.1	5,999.8	5,999.1	12.9	11.5	4.36	-95.5	-294.3	226.7	202.5	24.21	9.365	
6,104.3	6,098.5	6,102.3	6,101.6	13.2	11.8	4.86	-95.3	-294.2	206.8	182.2	24.56	8.418	
6,200.0	6,192.0	6,195.8	6,195.1	13.5	12.0	5.42	-95.2	-294.2	186.8	161.8	24.96	7.483	
6,300.0	6,289.8	6,293.5	6,292.8	13.7	12.2	6.15	-95.0	-294.2	166.0	140.6	25.37	6.541	
6,400.0	6,387.6	6,391.2	6,390.5	14.0	12.4	7.05	-95.0	-294.3	145.2	119.4	25.80	5.629	
6,500.0	6,485.4	6,488.8	6,488.1	14.3	12.6	8.26	-95.0	-294.4	124.6	98.4	26.22	4.751	
6,518.7	6,503.7	6,507.1	6,506.4	14.4	12.6	8.54	-94.9	-294.4	120.8	94.5	26.31	4.591	
6,550.0	6,534.2	6,537.5	6,536.8	14.5	12.7	22.18	-94.8	-294.5	114.2	87.8	26.42	4.322	
6,600.0	6,582.4	6,585.6	6,584.9	14.6	12.8	40.74	-94.5	-294.8	103.2	76.6	26.65	3.873	
6,650.0	6,629.7	6,632.3	6,631.6	14.8	12.9	57.71	-94.0	-295.2	92.8	65.8	27.01	3.437	
6,700.0	6,675.7	6,676.8	6,676.1	15.0	13.0	74.85	-93.5	-295.9	85.5	58.0	27.50	3.107	
6,733.9	6,705.9	6,707.8	6,707.0	15.1	13.0	87.28	-93.1	-296.7	83.9	56.1	27.86	3.012	CC, ES, SF
6,750.0	6,720.0	6,721.6	6,720.8	15.2	13.1	93.54	-92.2	-296.5	84.4	56.4	28.00	3.015	
6,800.0	6,762.3	6,758.9	6,757.8	15.4	13.1	110.82	-87.8	-294.8	94.1	65.9	28.15	3.343	
6,850.0	6,802.3	6,790.0	6,788.3	15.6	13.2	123.83	-82.5	-292.5	116.7	88.7	27.94	4.176	
6,900.0	6,839.6	6,814.0	6,811.7	15.9	13.3	132.03	-77.6	-290.1	149.1	121.5	27.60	5.404	
6,950.0	6,874.0	6,833.6	6,830.6	16.2	13.3	137.12	-73.0	-287.9	188.3	161.1	27.24	6.914	
7,000.0	6,905.3	6,845.0	6,841.6	16.5	13.3	138.05	-70.0	-286.5	232.0	204.9	27.09	8.565	
7,050.0	6,933.1	6,854.5	6,850.6	16.9	13.4	136.52	-67.2	-285.3	278.6	251.4	27.18	10.250	
7,064.4	6,940.5	6,856.3	6,852.2	17.0	13.4	135.08	-66.7	-285.1	292.4	265.1	27.32	10.703	
7,100.0	6,958.3	6,860.0	6,855.7	17.3	13.4	136.94	-65.5	-284.6	326.7	299.4	27.35	11.947	
7,200.0	7,008.3	6,876.0	6,870.7	18.1	13.4	143.76	-60.2	-282.6	424.1	396.9	27.20	15.593	
7,214.4	7,015.5	6,876.0	6,870.7	18.3	13.4	143.76	-60.2	-282.6	438.2	410.9	27.29	16.059	
7,250.0	7,032.4	6,876.0	6,870.7	18.6	13.4	140.66	-60.2	-282.6	473.2	445.5	27.66	17.106	
7,300.0	7,053.2	6,876.0	6,870.7	19.1	13.4	119.87	-60.2	-282.6	523.0	492.5	30.42	17.190	
7,350.0	7,070.3	6,876.0	6,870.7	19.7	13.4	7.82	-60.2	-282.6	572.9	549.6	23.29	24.599	
7,400.0	7,083.6	6,876.0	6,870.7	20.2	13.4	-11.93	-60.2	-282.6	622.7	599.2	23.55	26.442	
7,450.0	7,093.0	6,876.0	6,870.7	20.8	13.4	-16.33	-60.2	-282.6	672.0	648.2	23.82	28.211	
7,500.0	7,098.5	6,863.7	6,859.2	21.4	13.4	-16.78	-64.4	-284.2	720.3	696.6	23.71	30.378	
7,543.0	7,100.0	6,859.3	6,855.1	22.0	13.4	-17.59	-65.7	-284.7	761.2	737.4	23.74	32.069	
7,600.0	7,100.0	6,845.0	6,841.6	22.7	13.3	-16.38	-70.0	-286.5	815.0	791.3	23.78	34.272	
7,700.0	7,100.0	6,845.0	6,841.6	24.0	13.3	-16.38	-70.0	-286.5	909.9	885.7	24.22	37.576	
7,800.0	7,100.0	6,845.0	6,841.6	25.4	13.3	-16.38	-70.0	-286.5	1,005.8	981.1	24.69	40.731	
7,900.0	7,100.0	6,827.8	6,825.0	26.9	13.3	-15.07	-74.4	-288.5	1,101.9	1,076.9	24.95	44.156	
8,000.0	7,100.0	6,814.0	6,811.7	28.4	13.3	-14.13	-77.6	-290.1	1,198.7	1,173.4	25.30	47.384	
8,100.0	7,100.0	6,814.0	6,811.7	30.0	13.3	-14.13	-77.6	-290.1	1,295.8	1,269.9	25.85	50.134	
8,200.0	7,100.0	6,814.0	6,811.7	31.6	13.3	-14.13	-77.6	-290.1	1,393.2	1,366.8	26.42	52.731	
8,300.0	7,100.0	6,798.7	6,796.8	33.2	13.2	-13.19	-80.8	-291.6	1,490.8	1,464.0	26.80	55.631	
8,400.0	7,100.0	6,782.0	6,780.5	34.9	13.2	-12.30	-84.0	-293.2	1,588.8	1,561.6	27.19	58.438	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 7-17H - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 1031-Sperry MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,500.0	7,100.0	6,782.0	6,780.5	36.6	13.2	-12.30	-84.0	-293.2	1,686.7	1,658.9	27.80	60.671	
8,600.0	7,100.0	6,782.0	6,780.5	38.3	13.2	-12.30	-84.0	-293.2	1,784.9	1,756.4	28.43	62.777	
8,700.0	7,100.0	6,782.0	6,780.5	40.1	13.2	-12.30	-84.0	-293.2	1,883.2	1,854.2	29.08	64.763	
8,800.0	7,100.0	6,782.0	6,780.5	41.8	13.2	-12.30	-84.0	-293.2	1,981.8	1,952.0	29.74	66.637	
8,900.0	7,100.0	6,766.5	6,765.3	43.6	13.2	-11.57	-86.6	-294.3	2,080.2	2,050.0	30.19	68.907	
9,000.0	7,100.0	6,751.0	6,750.0	45.4	13.1	-10.93	-88.9	-295.3	2,179.0	2,148.3	30.66	71.063	
9,100.0	7,100.0	6,751.0	6,750.0	47.2	13.1	-10.93	-88.9	-295.3	2,277.7	2,246.4	31.34	72.680	
9,200.0	7,100.0	6,751.0	6,750.0	49.0	13.1	-10.93	-88.9	-295.3	2,376.5	2,344.5	32.02	74.211	
9,300.0	7,100.0	6,751.0	6,750.0	50.8	13.1	-10.93	-88.9	-295.3	2,475.4	2,442.7	32.72	75.662	
9,400.0	7,100.0	6,751.0	6,750.0	52.6	13.1	-10.93	-88.9	-295.3	2,574.4	2,541.0	33.42	77.037	
9,500.0	7,100.0	6,751.0	6,750.0	54.4	13.1	-10.93	-88.9	-295.3	2,673.4	2,639.3	34.12	78.343	
9,600.0	7,100.0	6,751.0	6,750.0	56.3	13.1	-10.93	-88.9	-295.3	2,772.6	2,737.7	34.84	79.582	
9,700.0	7,100.0	6,751.0	6,750.0	58.1	13.1	-10.93	-88.9	-295.3	2,871.7	2,836.2	35.56	80.761	
9,800.0	7,100.0	6,751.0	6,750.0	59.9	13.1	-10.93	-88.9	-295.3	2,971.0	2,934.7	36.28	81.883	
9,900.0	7,100.0	6,751.0	6,750.0	61.8	13.1	-10.93	-88.9	-295.3	3,070.3	3,033.3	37.01	82.951	
10,000.0	7,100.0	6,737.8	6,736.9	63.7	13.1	-10.46	-90.5	-295.9	3,169.4	3,131.9	37.54	84.430	
10,100.0	7,100.0	6,736.0	6,735.1	65.5	13.1	-10.40	-90.7	-296.0	3,268.8	3,230.5	38.24	85.471	
10,200.0	7,100.0	6,734.3	6,733.4	67.4	13.1	-10.34	-90.9	-296.1	3,368.1	3,329.2	38.95	86.465	
10,300.0	7,100.0	6,720.0	6,719.2	69.2	13.1	-9.90	-92.3	-296.5	3,467.7	3,428.2	39.48	87.823	
10,400.0	7,100.0	6,720.0	6,719.2	71.1	13.1	-9.90	-92.3	-296.5	3,567.0	3,526.8	40.22	88.688	
10,500.0	7,100.0	6,720.0	6,719.2	73.0	13.1	-9.90	-92.3	-296.5	3,666.5	3,625.5	40.96	89.516	
10,600.0	7,100.0	6,720.0	6,719.2	74.9	13.1	-9.90	-92.3	-296.5	3,765.9	3,724.2	41.70	90.309	
10,700.0	7,100.0	6,720.0	6,719.2	76.7	13.1	-9.90	-92.3	-296.5	3,865.4	3,822.9	42.44	91.070	
10,800.0	7,100.0	6,720.0	6,719.2	78.6	13.1	-9.90	-92.3	-296.5	3,964.9	3,921.7	43.19	91.800	
10,900.0	7,100.0	6,720.0	6,719.2	80.5	13.1	-9.90	-92.3	-296.5	4,064.4	4,020.5	43.94	92.501	
11,000.0	7,100.0	6,720.0	6,719.2	82.4	13.1	-9.90	-92.3	-296.5	4,164.0	4,119.3	44.69	93.174	
11,100.0	7,100.0	6,720.0	6,719.2	84.3	13.1	-9.90	-92.3	-296.5	4,263.5	4,218.1	45.44	93.822	
11,200.0	7,100.0	6,720.0	6,719.2	86.2	13.1	-9.90	-92.3	-296.5	4,363.1	4,316.9	46.20	94.445	
11,300.0	7,100.0	6,720.0	6,719.2	88.1	13.1	-9.90	-92.3	-296.5	4,462.7	4,415.8	46.95	95.045	
11,400.0	7,100.0	6,720.0	6,719.2	90.0	13.1	-9.90	-92.3	-296.5	4,562.4	4,514.7	47.71	95.623	
11,500.0	7,100.0	6,720.0	6,719.2	91.8	13.1	-9.90	-92.3	-296.5	4,662.0	4,613.5	48.47	96.180	
11,600.0	7,100.0	6,720.0	6,719.2	93.7	13.1	-9.90	-92.3	-296.5	4,761.7	4,712.4	49.23	96.717	
11,700.0	7,100.0	6,720.0	6,719.2	95.6	13.1	-9.90	-92.3	-296.5	4,861.3	4,811.4	50.00	97.236	
11,800.0	7,100.0	6,720.0	6,719.2	97.5	13.1	-9.90	-92.3	-296.5	4,961.0	4,910.3	50.76	97.737	
11,892.4	7,100.0	6,720.0	6,719.2	99.3	13.1	-9.90	-92.3	-296.5	5,053.1	5,001.7	51.47	98.185	
11,900.0	7,100.0	6,720.0	6,719.2	99.4	13.1	-7.95	-92.3	-296.5	5,060.7	5,010.3	50.47	100.271	
11,958.5	7,100.0	6,720.0	6,719.2	100.4	13.1	7.43	-92.3	-296.5	5,119.0	5,067.9	51.14	100.095	
12,000.0	7,100.0	6,720.0	6,719.2	101.1	13.1	7.43	-92.3	-296.5	5,160.4	5,109.0	51.45	100.307	
12,100.0	7,100.0	6,720.0	6,719.2	103.0	13.1	7.43	-92.3	-296.5	5,260.2	5,208.0	52.19	100.796	
12,200.0	7,100.0	6,720.0	6,719.2	104.9	13.1	7.43	-92.3	-296.5	5,359.9	5,307.0	52.93	101.270	
12,300.0	7,100.0	6,720.0	6,719.2	106.8	13.1	7.43	-92.3	-296.5	5,459.6	5,406.0	53.67	101.730	
12,400.0	7,100.0	6,720.0	6,719.2	108.7	13.1	7.43	-92.3	-296.5	5,559.4	5,505.0	54.41	102.175	
12,500.0	7,100.0	6,720.0	6,719.2	110.6	13.1	7.43	-92.3	-296.5	5,659.2	5,604.0	55.15	102.607	
12,600.0	7,100.0	6,720.0	6,719.2	112.5	13.1	7.43	-92.3	-296.5	5,758.9	5,703.0	55.90	103.025	
12,700.0	7,100.0	6,720.0	6,719.2	114.4	13.1	7.43	-92.3	-296.5	5,858.7	5,802.1	56.64	103.432	
12,800.0	7,100.0	6,720.0	6,719.2	116.3	13.1	7.43	-92.3	-296.5	5,958.5	5,901.1	57.39	103.827	
12,900.0	7,100.0	6,720.0	6,719.2	118.2	13.1	7.43	-92.3	-296.5	6,058.3	6,000.1	58.14	104.210	
13,000.0	7,100.0	6,720.0	6,719.2	120.1	13.1	7.43	-92.3	-296.5	6,158.1	6,099.2	58.88	104.583	
13,100.0	7,100.0	6,720.0	6,719.2	122.0	13.1	7.43	-92.3	-296.5	6,257.9	6,198.3	59.63	104.946	
13,200.0	7,100.0	6,720.0	6,719.2	123.9	13.1	7.43	-92.3	-296.5	6,357.7	6,297.3	60.38	105.298	
13,300.0	7,100.0	6,720.0	6,719.2	125.8	13.1	7.43	-92.3	-296.5	6,457.5	6,396.4	61.13	105.641	
13,400.0	7,100.0	6,720.0	6,719.2	127.7	13.1	7.43	-92.3	-296.5	6,557.3	6,495.5	61.88	105.974	

SandRidge Energy

Anticollision Report

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design T7N-R80W-S17 - Mutual 7-17H - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 1031-Sperry MWD

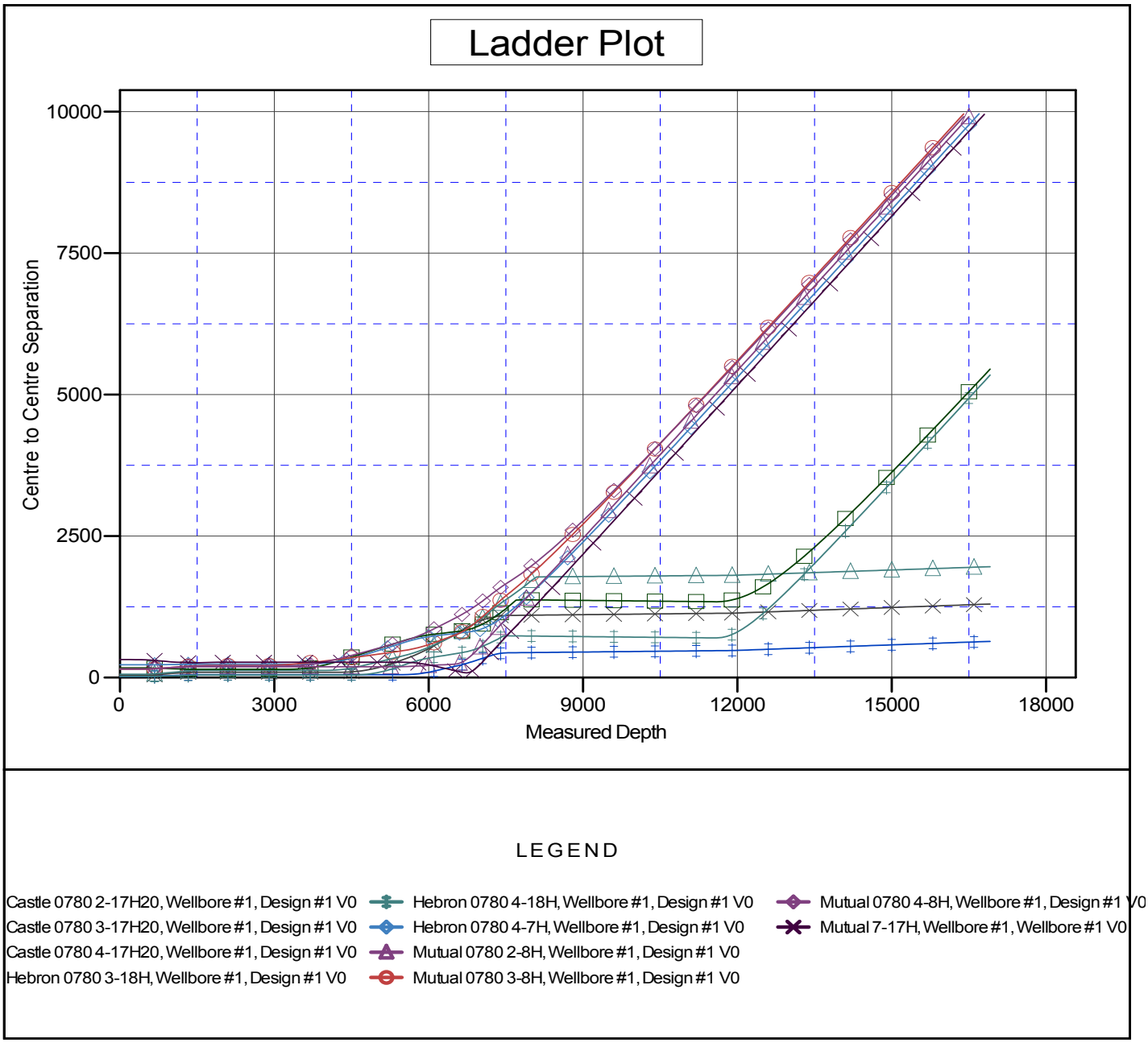
Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,500.0	7,100.0	6,720.0	6,719.2	129.6	13.1	7.43	-92.3	-296.5	6,657.2	6,594.5	62.63	106.299	
13,600.0	7,100.0	6,720.0	6,719.2	131.5	13.1	7.43	-92.3	-296.5	6,757.0	6,693.6	63.38	106.616	
13,700.0	7,100.0	6,720.0	6,719.2	133.4	13.1	7.43	-92.3	-296.5	6,856.8	6,792.7	64.13	106.924	
13,800.0	7,100.0	6,720.0	6,719.2	135.4	13.1	7.43	-92.3	-296.5	6,956.7	6,891.8	64.88	107.224	
13,900.0	7,100.0	6,720.0	6,719.2	137.3	13.1	7.43	-92.3	-296.5	7,056.5	6,990.9	65.63	107.517	
14,000.0	7,100.0	6,720.0	6,719.2	139.2	13.1	7.43	-92.3	-296.5	7,156.4	7,090.0	66.38	107.803	
14,100.0	7,100.0	6,720.0	6,719.2	141.1	13.1	7.43	-92.3	-296.5	7,256.2	7,189.1	67.14	108.081	
14,200.0	7,100.0	6,720.0	6,719.2	143.0	13.1	7.43	-92.3	-296.5	7,356.1	7,288.2	67.89	108.353	
14,300.0	7,100.0	6,720.0	6,719.2	144.9	13.1	7.43	-92.3	-296.5	7,456.0	7,387.3	68.64	108.618	
14,400.0	7,100.0	6,720.0	6,719.2	146.8	13.1	7.43	-92.3	-296.5	7,555.8	7,486.4	69.40	108.877	
14,500.0	7,100.0	6,720.0	6,719.2	148.7	13.1	7.43	-92.3	-296.5	7,655.7	7,585.5	70.15	109.130	
14,600.0	7,100.0	6,720.0	6,719.2	150.6	13.1	7.43	-92.3	-296.5	7,755.6	7,684.7	70.91	109.377	
14,700.0	7,100.0	6,720.0	6,719.2	152.5	13.1	7.43	-92.3	-296.5	7,855.4	7,783.8	71.66	109.619	
14,800.0	7,100.0	6,720.0	6,719.2	154.4	13.1	7.43	-92.3	-296.5	7,955.3	7,882.9	72.42	109.855	
14,900.0	7,100.0	6,720.0	6,719.2	156.3	13.1	7.43	-92.3	-296.5	8,055.2	7,982.0	73.17	110.085	
15,000.0	7,100.0	6,720.0	6,719.2	158.2	13.1	7.43	-92.3	-296.5	8,155.1	8,081.2	73.93	110.311	
15,100.0	7,100.0	6,720.0	6,719.2	160.1	13.1	7.43	-92.3	-296.5	8,255.0	8,180.3	74.68	110.531	
15,200.0	7,100.0	6,720.0	6,719.2	162.1	13.1	7.43	-92.3	-296.5	8,354.9	8,279.4	75.44	110.747	
15,300.0	7,100.0	6,720.0	6,719.2	164.0	13.1	7.43	-92.3	-296.5	8,454.8	8,378.6	76.20	110.958	
15,400.0	7,100.0	6,720.0	6,719.2	165.9	13.1	7.43	-92.3	-296.5	8,554.7	8,477.7	76.95	111.165	
15,500.0	7,100.0	6,720.0	6,719.2	167.8	13.1	7.43	-92.3	-296.5	8,654.6	8,576.9	77.71	111.367	
15,600.0	7,100.0	6,720.0	6,719.2	169.7	13.1	7.43	-92.3	-296.5	8,754.5	8,676.0	78.47	111.565	
15,700.0	7,100.0	6,720.0	6,719.2	171.6	13.1	7.43	-92.3	-296.5	8,854.4	8,775.1	79.23	111.759	
15,800.0	7,100.0	6,720.0	6,719.2	173.5	13.1	7.43	-92.3	-296.5	8,954.3	8,874.3	79.99	111.949	
15,900.0	7,100.0	6,720.0	6,719.2	175.4	13.1	7.43	-92.3	-296.5	9,054.2	8,973.4	80.74	112.135	
16,000.0	7,100.0	6,720.0	6,719.2	177.3	13.1	7.43	-92.3	-296.5	9,154.1	9,072.6	81.50	112.317	
16,100.0	7,100.0	6,720.0	6,719.2	179.2	13.1	7.43	-92.3	-296.5	9,254.0	9,171.7	82.26	112.496	
16,200.0	7,100.0	6,720.0	6,719.2	181.2	13.1	7.43	-92.3	-296.5	9,353.9	9,270.9	83.02	112.671	
16,300.0	7,100.0	6,720.0	6,719.2	183.1	13.1	7.43	-92.3	-296.5	9,453.8	9,370.1	83.78	112.843	
16,400.0	7,100.0	6,720.0	6,719.2	185.0	13.1	7.43	-92.3	-296.5	9,553.8	9,469.2	84.54	113.012	
16,500.0	7,100.0	6,720.0	6,719.2	186.9	13.1	7.43	-92.3	-296.5	9,653.7	9,568.4	85.30	113.177	
16,600.0	7,100.0	6,720.0	6,719.2	188.8	13.1	7.43	-92.3	-296.5	9,753.6	9,667.5	86.06	113.339	
16,700.0	7,100.0	6,720.0	6,719.2	190.7	13.1	7.43	-92.3	-296.5	9,853.5	9,766.7	86.82	113.499	
16,800.0	7,100.0	6,704.0	6,703.3	192.6	13.0	7.15	-93.3	-296.7	9,953.1	9,865.8	87.28	114.036	

Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 8172.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

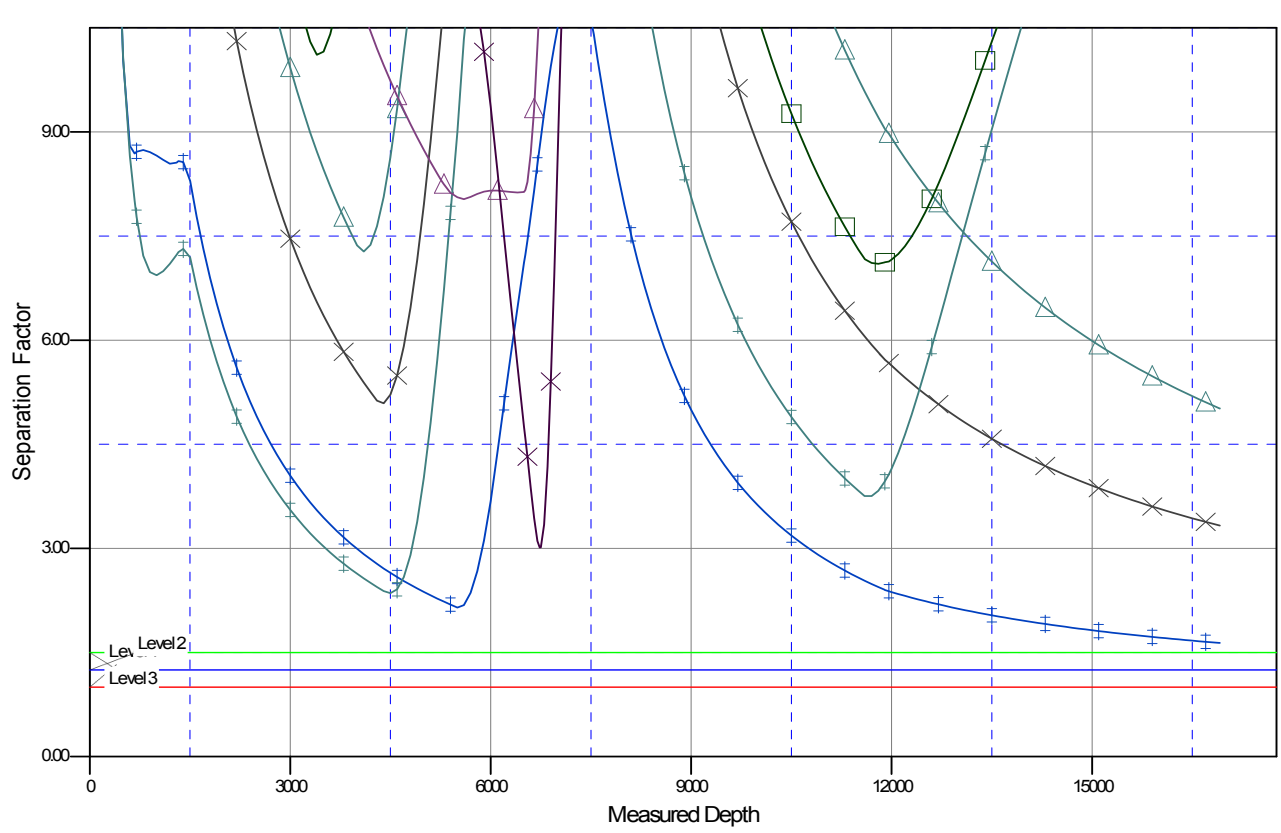
Coordinates are relative to: Castle 0780 1-17H20
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: -0.58°



Company:	SandRidge Energy	**Local Co-ordinate Reference:**	Well Castle 0780 1-17H20
Project:	North Park Basin	**TVD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Reference Site:	T7N-R80W-S17	**MD Reference:**	WELL @ 8172.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Castle 0780 1-17H20	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMProd
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 8172.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Castle 0780 1-17H20
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: -0.58°



LEGEND

- Castle 0780 2-17H20, Wellbore #1, Design #1 V0
- Castle 0780 3-17H20, Wellbore #1, Design #1 V0
- Castle 0780 4-17H20, Wellbore #1, Design #1 V0
- Hebron 0780 3-18H, Wellbore #1, Design #1 V0
- Hebron 0780 4-18H, Wellbore #1, Design #1 V0
- Hebron 0780 4-7H, Wellbore #1, Design #1 V0
- Mutual 0780 2-8H, Wellbore #1, Design #1 V0
- Mutual 0780 3-8H, Wellbore #1, Design #1 V0
- Mutual 0780 4-8H, Wellbore #1, Design #1 V0
- Mutual 7-17H, Wellbore #1, Wellbore #1 V0