Statoil - As-Drilled

HALLIBURTON
Sperry Drilling Services

Tyler County WV (NAD 27 UTM 17N us ft)
Site: Ball Pad
Well: Ball 10H
Wellbore: Wellbore #1
Design: Design #3

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	Start Build
950.00	8.00	280.00	948.70	4.84	-27.46	2.00	280.00	11.79	End Build
1550.00	8.00	280.00	1542.86	19.34	-109.69	0.00	0.00	47.09	Start Drop
1950.00	0.00	0.00	1941.56	24.18	-137.15	2.00	180.00	58.88	End Drop
6326.00	0.00	0.00	6317.56	24.18	-137.15	0.00	0.00	58.88	Start Build
6942.89	61.70	304.81	6821.94	196.17	-384.52	10.00	304.81	289.07	Start Build/Turn
7422.60	90.40	344.99	6941.00	570.54	-634.83	10.00	60.28	715.49	End Build/Turn
13872.70	90.40	344.99	6896.00	6800.54	-2304.83	0.00	0.00	7165.43	TD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Ball 10H BHL	6896.00	6800.54	-2304.83	14353029.00	1706892.00
Ball 10H LTP	6941.00	570.54	-634.83	14346799.00	1708562.00

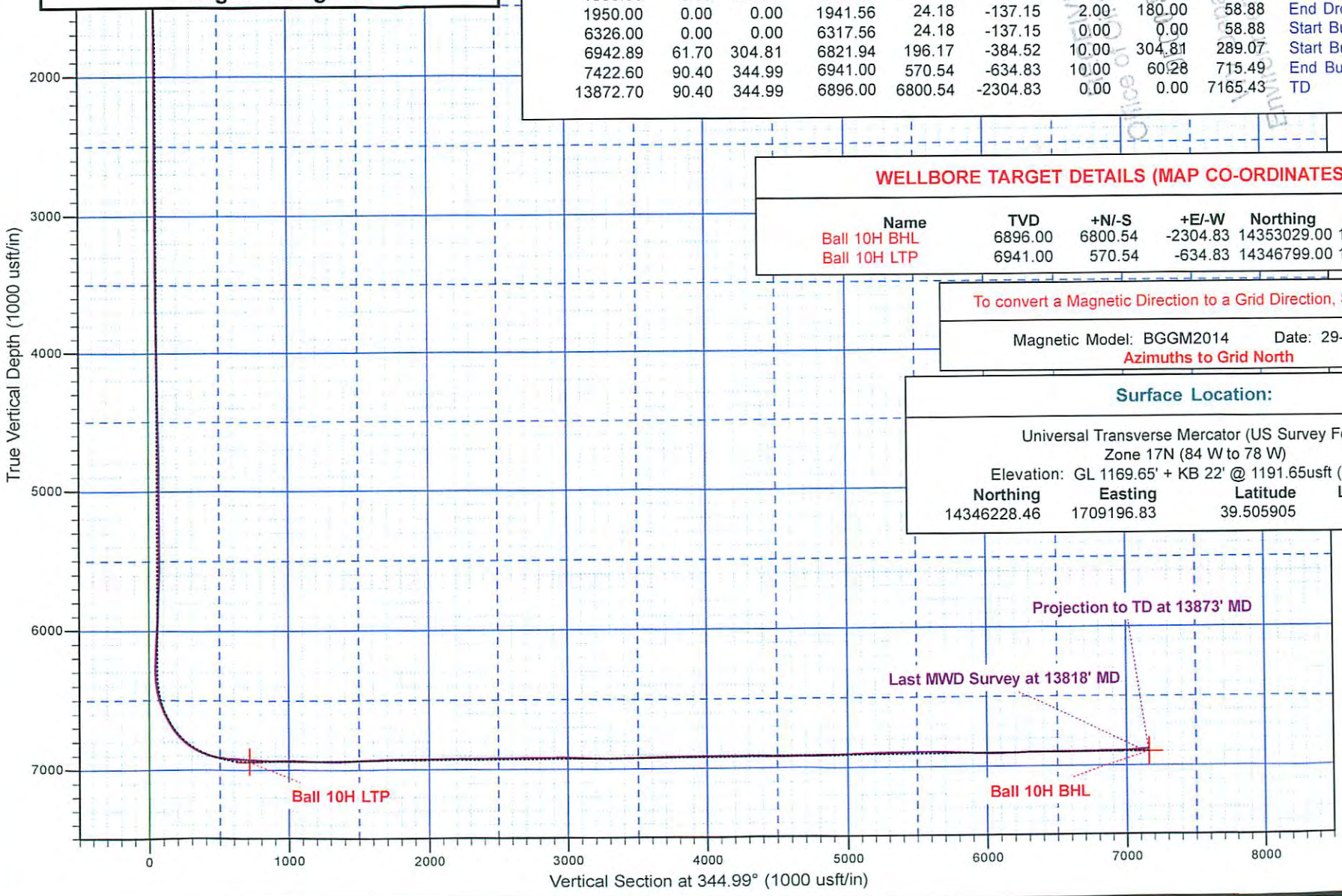
To convert a Magnetic Direction to a Grid Direction, Subtract 8.70°

Magnetic Model: BGGM2014 Date: 29-Jan-15
Azimuths to Grid North

Surface Location:

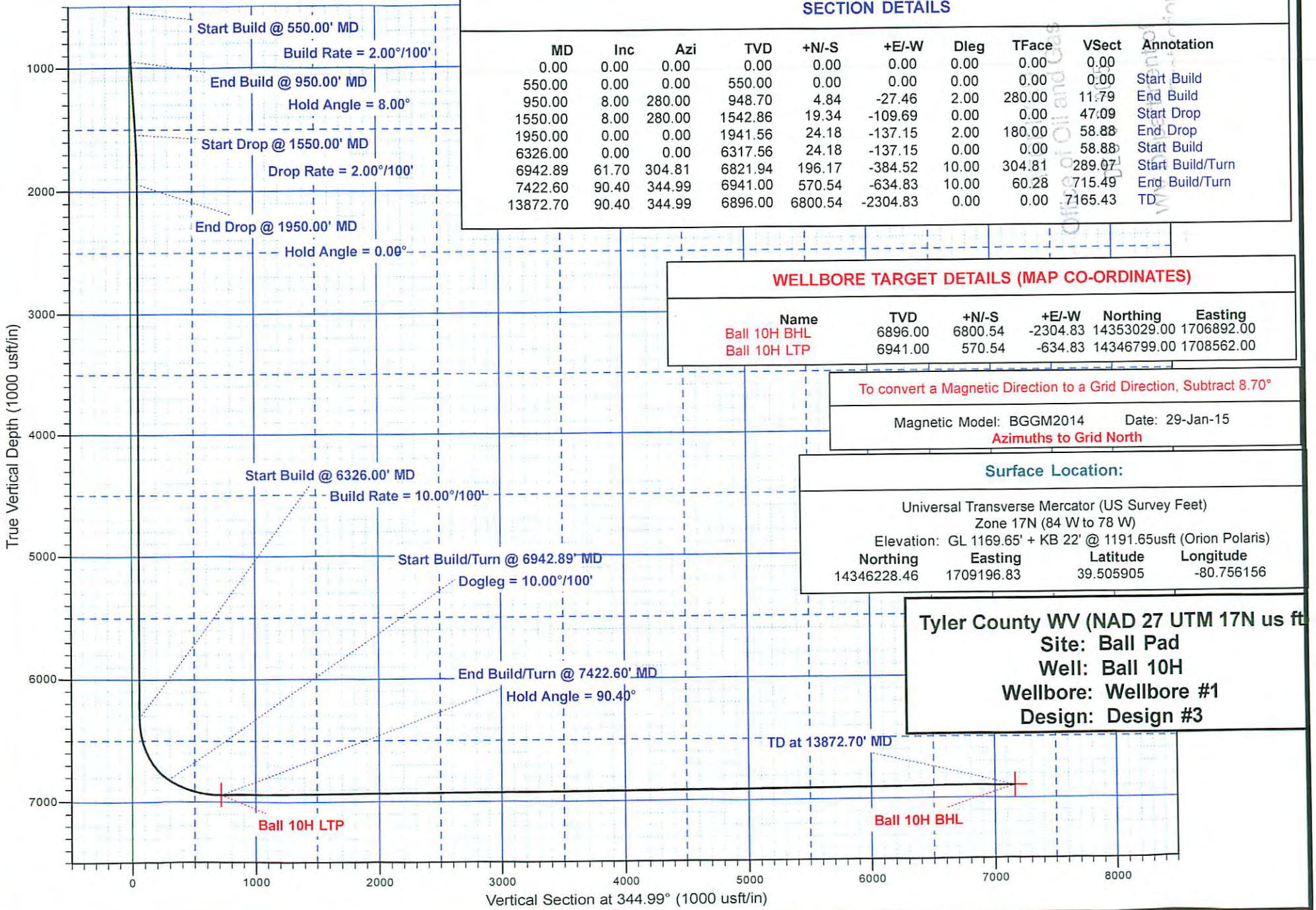
Universal Transverse Mercator (US Survey Feet)
Zone 17N (84 W to 78 W)
Elevation: GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)

Northing	Easting	Latitude	Longitude
14346228.46	1709196.83	39.505905	-80.756156



Statoil - proposed

HALLIBURTON
Sperry Drilling Services



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	Start Build
950.00	8.00	280.00	948.70	4.84	-27.46	2.00	280.00	11.79	End Build
1550.00	8.00	280.00	1542.86	19.34	-109.69	0.00	0.00	47.09	Start Drop
1950.00	0.00	0.00	1941.56	24.18	-137.15	2.00	180.00	58.88	End Drop
6326.00	0.00	0.00	6317.56	24.18	-137.15	0.00	0.00	58.88	Start Build
6942.89	61.70	304.81	6821.94	196.17	-384.52	10.00	304.81	289.07	Start Build/Turn
7422.60	90.40	344.99	6941.00	570.54	-634.83	10.00	60.28	715.49	End Build/Turn
13872.70	90.40	344.99	6896.00	6800.54	-2304.83	0.00	0.00	7165.43	TD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Ball 10H BHL	6896.00	6800.54	-2304.83	14353029.00	1706892.00
Ball 10H LTP	6941.00	570.54	-634.83	14346799.00	1708562.00

To convert a Magnetic Direction to a Grid Direction, Subtract 8.70°

Magnetic Model: BGGM2014 Date: 29-Jan-15
Azimuths to Grid North

Surface Location:

Universal Transverse Mercator (US Survey Feet)
Zone 17N (84 W to 78 W)
Elevation: GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)

Northing	Easting	Latitude	Longitude
14346228.46	1709196.83	39.505905	-80.756156

Tyler County WV (NAD 27 UTM 17N us ft
Site: Ball Pad
Well: Ball 10H
Wellbore: Wellbore #1
Design: Design #3

HALLIBURTON

Sperry Drilling

Statoil

Tyler County WV (NAD 27 UTM 17N us ft)
Ball Pad
Ball 10H

Wellbore #1

Design: Surveys

Standard Survey Report

15 April, 2015

HALLIBURTON
Sperry Drilling

Survey Report

Company:	Statoil	**Local Co-ordinate Reference:**	Well Ball 10H
Project:	Tyler County WV (NAD 27 UTM 17N us ft)	**TVD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Site:	Ball Pad	**MD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Well:	Ball 10H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Project Tyler County WV (NAD 27 UTM 17N us ft)

Map System:	Universal Transverse Mercator (US Survey Fee	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site Ball Pad

Site Position:		**Northing:**	14,346,236.04 usft	**Latitude:**	39.505926
From:	Map	**Easting:**	1,709,198.06 usft	**Longitude:**	-80.756152
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.16 °

Well Ball 10H

Well Position	**+N/-S**	0.00 usft	**Northing:**	14,346,228.46 usft	**Latitude:**	39.505905
	+E/-W	0.00 usft	**Easting:**	1,709,196.83 usft	**Longitude:**	-80.756156
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	1,169.65 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	1/29/2015	-8.54	66.98	52,283

Design Surveys

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	344.99

Survey Program **Date** 4/8/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	390.00	MS Gyro (Wellbore #1)	NSG-CT_csg+cent	Continuous gyro in casing + centrollers
492.00	13,873.00	Sperry MWD (Wellbore #1)	MWD	Fixed:v2:standard declination

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.81	277.04	100.00	0.09	-0.70	0.27	0.81	0.81	0.00
200.00	1.05	254.68	199.98	-0.07	-2.29	0.53	0.43	0.24	-22.36
300.00	1.19	236.16	299.96	-0.89	-4.03	0.19	0.39	0.14	-18.52
390.00	1.13	250.63	389.95	-1.70	-5.65	-0.18	0.33	-0.07	16.08
492.00	1.57	260.73	491.92	-2.26	-7.97	-0.12	0.49	0.43	9.90
584.00	2.74	278.97	583.85	-2.12	-11.39	0.90	1.46	1.27	19.83
675.00	4.30	293.86	674.68	-0.40	-16.66	3.92	1.97	1.71	16.36

Company:	Statoil	**Local Co-ordinate Reference:**	Well Ball 10H
Project:	Tyler County WV (NAD 27 UTM 17N us ft)	**TVD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Site:	Ball Pad	**MD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Well:	Ball 10H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
767.00	5.92	296.91	766.31	3.14	-24.04	9.26	1.78	1.76	3.32
859.00	7.46	292.66	857.68	7.59	-33.79	16.08	1.76	1.67	-4.62
951.00	7.85	284.20	948.87	11.43	-45.39	22.80	1.29	0.42	-9.20
1,044.00	8.25	280.55	1,040.95	14.21	-58.11	28.77	0.70	0.43	-3.92
1,135.00	8.76	278.90	1,130.95	16.48	-71.37	34.40	0.62	0.56	-1.81
1,227.00	9.09	276.70	1,221.84	18.41	-85.51	39.93	0.52	0.36	-2.39
1,321.00	7.64	276.61	1,314.83	19.99	-99.09	44.98	1.54	-1.54	-0.10
1,416.00	4.84	268.50	1,409.26	20.62	-109.37	48.24	3.08	-2.95	-8.54
1,510.00	3.92	258.71	1,502.99	19.88	-116.49	49.37	1.26	-0.98	-10.41
1,605.00	4.66	260.23	1,597.72	18.59	-123.48	49.94	0.79	0.78	1.60
1,701.00	4.78	248.95	1,693.40	16.49	-131.05	49.87	0.97	0.12	-11.75
1,797.00	4.42	251.55	1,789.09	13.89	-138.30	49.23	0.43	-0.37	2.71
1,891.00	1.61	281.79	1,882.95	13.01	-143.03	49.61	3.34	-2.99	32.17
1,986.00	1.16	307.83	1,977.93	13.87	-145.09	50.98	0.80	-0.47	27.41
2,081.00	0.96	33.54	2,072.91	15.13	-145.41	52.27	1.53	-0.21	90.22
2,176.00	2.28	83.04	2,167.88	16.02	-143.10	52.53	1.91	1.39	52.11
2,272.00	0.39	123.68	2,263.85	16.07	-140.93	52.02	2.08	-1.97	42.33
2,367.00	0.87	247.26	2,358.85	15.61	-141.32	51.68	1.19	0.51	130.08
2,463.00	1.19	245.42	2,454.83	14.91	-142.90	51.42	0.34	0.33	-1.92
2,581.00	1.52	256.88	2,572.80	14.05	-145.54	51.26	0.36	0.28	9.71
2,677.00	1.80	259.60	2,668.76	13.49	-148.26	51.43	0.30	0.29	2.83
2,773.00	1.27	258.93	2,764.72	13.01	-150.79	51.62	0.55	-0.55	-0.70
2,868.00	0.98	266.16	2,859.70	12.76	-152.63	51.85	0.34	-0.31	7.61
2,963.00	0.72	257.79	2,954.69	12.57	-154.03	52.04	0.30	-0.27	-8.81
3,059.00	0.33	284.68	3,050.69	12.52	-154.89	52.20	0.47	-0.41	28.01
3,154.00	0.29	5.63	3,145.69	12.83	-155.13	52.56	0.42	-0.04	85.21
3,250.00	0.45	318.41	3,241.69	13.35	-155.35	53.13	0.34	0.17	-49.19
3,345.00	0.59	332.16	3,336.68	14.06	-155.83	53.94	0.20	0.15	14.47
3,441.00	0.57	321.61	3,432.68	14.87	-156.36	54.86	0.11	-0.02	-10.99
3,536.00	0.57	325.52	3,527.67	15.63	-156.92	55.74	0.04	0.00	4.12
3,632.00	0.30	305.05	3,623.67	16.17	-157.39	56.38	0.32	-0.28	-21.32
3,728.00	0.86	42.61	3,719.67	16.84	-157.11	56.96	0.99	0.58	101.62
3,824.00	1.85	53.71	3,815.64	18.29	-155.37	57.91	1.06	1.03	11.56
3,919.00	1.75	47.40	3,910.59	20.18	-153.07	59.14	0.23	-0.11	-6.64
4,013.00	1.67	45.08	4,004.55	22.12	-151.04	60.48	0.11	-0.09	-2.47
4,108.00	1.61	47.36	4,099.51	24.00	-149.08	61.79	0.09	-0.06	2.40
4,203.00	1.40	34.84	4,194.48	25.86	-147.44	63.16	0.41	-0.22	-13.18
4,299.00	1.05	33.31	4,290.46	27.56	-146.29	64.50	0.37	-0.36	-1.59
4,394.00	1.17	22.88	4,385.44	29.18	-145.43	65.85	0.25	0.13	-10.98
4,489.00	1.35	31.38	4,480.42	31.03	-144.47	67.38	0.27	0.19	8.95
4,585.00	1.44	18.41	4,576.39	33.14	-143.50	69.17	0.34	0.09	-13.51
4,680.00	1.45	9.57	4,671.36	35.45	-142.92	71.26	0.23	0.01	-9.31

Company:	Statoil	**Local Co-ordinate Reference:**	Well Ball 10H
Project:	Tyler County WV (NAD 27 UTM 17N us ft)	**TVD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Site:	Ball Pad	**MD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Well:	Ball 10H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,776.00	1.04	24.78	4,767.33	37.44	-142.36	73.03	0.54	-0.43	15.84
4,872.00	0.47	91.46	4,863.33	38.22	-141.60	73.59	1.00	-0.59	69.46
4,967.00	0.30	65.17	4,958.33	38.32	-140.98	73.52	0.25	-0.18	-27.67
5,062.00	0.31	45.37	5,053.32	38.60	-140.57	73.69	0.11	0.01	-20.84
5,156.00	0.50	50.02	5,147.32	39.05	-140.08	73.99	0.20	0.20	4.95
5,252.00	0.76	47.76	5,243.32	39.74	-139.29	74.46	0.27	0.27	-2.35
5,346.00	0.92	61.58	5,337.31	40.52	-138.16	74.92	0.27	0.17	14.70
5,442.00	1.34	64.69	5,433.29	41.37	-136.47	75.30	0.44	0.44	3.24
5,536.00	1.26	97.72	5,527.26	41.70	-134.45	75.10	0.79	-0.09	35.14
5,632.00	2.02	148.35	5,623.23	40.12	-132.52	73.07	1.63	0.79	52.74
5,727.00	2.08	162.05	5,718.17	37.05	-131.11	69.74	0.52	0.06	14.42
5,822.00	2.07	173.55	5,813.11	33.71	-130.38	66.32	0.44	-0.01	12.11
5,916.00	2.03	191.14	5,907.05	30.39	-130.51	63.15	0.67	-0.04	18.71
6,011.00	2.83	188.74	6,001.96	26.42	-131.20	59.49	0.85	0.84	-2.53
6,106.00	3.22	188.66	6,096.83	21.46	-131.95	54.90	0.41	0.41	-0.08
6,190.00	3.51	185.86	6,180.68	16.57	-132.57	50.34	0.40	0.35	-3.33
6,286.00	2.99	226.91	6,276.54	11.94	-134.70	46.41	2.43	-0.54	42.76
6,381.00	11.36	289.22	6,370.80	13.33	-145.37	50.52	10.85	8.81	65.59
6,475.00	17.64	300.04	6,461.78	23.52	-166.47	65.83	7.25	6.68	11.51
6,570.00	25.29	309.45	6,550.15	43.65	-194.65	92.57	8.81	8.05	9.91
6,665.00	32.87	308.24	6,633.11	72.54	-230.62	129.80	8.00	7.98	-1.27
6,760.00	42.14	302.11	6,708.42	105.53	-277.98	173.92	10.51	9.76	-6.45
6,854.00	52.19	304.55	6,772.25	143.45	-335.43	225.42	10.86	10.69	2.60
6,949.00	60.18	309.48	6,825.10	191.03	-398.27	287.66	9.45	8.41	5.19
7,045.00	66.90	316.65	6,867.90	249.74	-460.86	360.58	9.68	7.00	7.47
7,140.00	76.06	322.32	6,898.06	318.19	-519.20	441.80	11.18	9.64	5.97
7,235.00	84.28	327.65	6,914.28	394.79	-572.80	529.67	10.27	8.65	5.61
7,330.00	88.82	333.92	6,920.00	477.50	-619.04	621.53	8.14	4.78	6.60
7,426.00	84.79	341.06	6,925.36	565.97	-655.71	716.48	8.53	-4.20	7.44
7,517.00	87.54	347.46	6,931.45	653.31	-680.32	807.21	7.64	3.02	7.03
7,608.00	88.99	347.00	6,934.20	742.01	-700.42	898.10	1.67	1.59	-0.51
7,700.00	90.77	346.65	6,934.40	831.59	-721.39	990.05	1.97	1.93	-0.38
7,792.00	87.78	347.37	6,935.56	921.22	-742.07	1,081.97	3.34	-3.25	0.78
7,883.00	88.59	347.32	6,938.44	1,009.96	-761.99	1,172.85	0.89	0.89	-0.05
7,976.00	89.50	346.16	6,939.99	1,100.47	-783.32	1,265.79	1.59	0.98	-1.25
8,067.00	91.01	345.79	6,939.59	1,188.75	-805.37	1,356.77	1.71	1.66	-0.41
8,159.00	92.72	345.01	6,936.59	1,277.73	-828.55	1,448.72	2.04	1.86	-0.85
8,251.00	90.77	345.12	6,933.79	1,366.57	-852.25	1,540.67	2.12	-2.12	0.12
8,343.00	91.71	345.73	6,931.80	1,455.59	-875.40	1,632.64	1.22	1.02	0.66
8,436.00	93.16	345.68	6,927.85	1,545.63	-898.34	1,725.55	1.56	1.56	-0.05
8,527.00	88.76	345.88	6,926.33	1,633.81	-920.68	1,816.51	4.84	-4.84	0.22
8,619.00	89.80	346.07	6,927.48	1,723.06	-942.98	1,908.48	1.15	1.13	0.21

Company:	Statoil	**Local Co-ordinate Reference:**	Well Ball 10H
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Site:	Ball Pad	**MD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Well:	Ball 10H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,713.00	91.21	346.25	6,926.65	1,814.32	-965.46	2,002.46	1.51	1.50	0.19
8,807.00	92.82	345.99	6,923.35	1,905.52	-988.00	2,096.38	1.73	1.71	-0.28
8,902.00	89.40	345.12	6,921.51	1,997.48	-1,011.69	2,191.34	3.71	-3.60	-0.92
8,996.00	90.97	345.72	6,921.20	2,088.45	-1,035.35	2,285.34	1.79	1.67	0.64
9,091.00	92.75	345.85	6,918.12	2,180.49	-1,058.66	2,380.27	1.88	1.87	0.14
9,186.00	88.59	343.53	6,917.01	2,272.08	-1,083.74	2,475.24	5.01	-4.38	-2.44
9,281.00	89.70	343.31	6,918.43	2,363.12	-1,110.84	2,570.19	1.19	1.17	-0.23
9,377.00	91.41	343.23	6,917.50	2,455.05	-1,138.48	2,666.14	1.78	1.78	-0.08
9,472.00	89.93	344.39	6,916.39	2,546.27	-1,164.96	2,761.11	1.98	-1.56	1.22
9,567.00	91.44	344.63	6,915.25	2,637.81	-1,190.33	2,856.09	1.61	1.59	0.25
9,662.00	88.96	344.48	6,914.92	2,729.38	-1,215.63	2,951.08	2.62	-2.61	-0.16
9,758.00	86.95	344.66	6,918.35	2,821.85	-1,241.15	3,047.01	2.10	-2.09	0.19
9,853.00	88.42	344.13	6,922.18	2,913.27	-1,266.69	3,141.93	1.64	1.55	-0.56
9,949.00	89.26	343.94	6,924.13	3,005.55	-1,293.09	3,237.90	0.90	0.87	-0.20
10,045.00	89.90	343.40	6,924.83	3,097.67	-1,320.08	3,333.87	0.87	0.67	-0.56
10,140.00	91.41	342.41	6,923.74	3,188.47	-1,348.00	3,428.79	1.90	1.59	-1.04
10,236.00	92.92	341.93	6,920.12	3,279.79	-1,377.37	3,524.61	1.65	1.57	-0.50
10,330.00	90.74	344.13	6,917.12	3,369.64	-1,404.79	3,618.49	3.29	-2.32	2.34
10,426.00	91.71	343.91	6,915.06	3,461.91	-1,431.21	3,714.45	1.04	1.01	-0.23
10,522.00	89.70	346.18	6,913.88	3,554.64	-1,455.98	3,810.44	3.16	-2.09	2.36
10,617.00	90.20	345.46	6,913.96	3,646.74	-1,479.25	3,905.43	0.92	0.53	-0.76
10,712.00	91.85	345.47	6,912.27	3,738.68	-1,503.09	4,000.40	1.74	1.74	0.01
10,807.00	89.70	346.38	6,910.98	3,830.82	-1,526.19	4,095.38	2.46	-2.26	0.96
10,902.00	89.60	346.91	6,911.56	3,923.25	-1,548.13	4,190.33	0.57	-0.11	0.56
10,996.00	91.08	346.78	6,911.00	4,014.77	-1,569.52	4,284.28	1.58	1.57	-0.14
11,091.00	87.82	346.41	6,911.91	4,107.17	-1,591.54	4,379.23	3.45	-3.43	-0.39
11,187.00	89.26	346.68	6,914.36	4,200.50	-1,613.87	4,475.16	1.53	1.50	0.28
11,282.00	89.76	346.28	6,915.17	4,292.87	-1,636.08	4,570.12	0.67	0.53	-0.42
11,377.00	90.97	346.87	6,914.57	4,385.27	-1,658.14	4,665.08	1.42	1.27	0.62
11,474.00	91.95	346.45	6,912.10	4,479.62	-1,680.51	4,762.01	1.10	1.01	-0.43
11,570.00	92.65	346.59	6,908.24	4,572.90	-1,702.87	4,857.89	0.74	0.73	0.15
11,666.00	90.07	344.93	6,905.97	4,665.91	-1,726.48	4,953.85	3.20	-2.69	-1.73
11,762.00	91.21	344.87	6,904.89	4,758.59	-1,751.48	5,049.84	1.19	1.19	-0.06
11,857.00	92.55	344.84	6,901.78	4,850.24	-1,776.29	5,144.79	1.41	1.41	-0.03
11,953.00	90.13	342.45	6,899.53	4,942.31	-1,803.31	5,240.72	3.54	-2.52	-2.49
12,048.00	90.94	341.74	6,898.64	5,032.71	-1,832.52	5,335.59	1.13	0.85	-0.75
12,143.00	92.49	341.69	6,895.80	5,122.87	-1,862.31	5,430.39	1.63	1.63	-0.05
12,238.00	90.07	344.02	6,893.68	5,213.61	-1,890.30	5,525.29	3.54	-2.55	2.45
12,331.00	89.56	346.24	6,893.98	5,303.49	-1,914.17	5,618.28	2.45	-0.55	2.39
12,427.00	87.28	345.21	6,896.63	5,396.48	-1,937.83	5,714.23	2.61	-2.37	-1.07
12,523.00	88.32	345.26	6,900.31	5,489.24	-1,962.27	5,810.16	1.08	1.08	0.05
12,619.00	88.83	345.14	6,902.70	5,582.03	-1,986.79	5,906.13	0.55	0.53	-0.12

HALLIBURTON
Sperry Drilling

Survey Report

Company:	Statoil	**Local Co-ordinate Reference:**	Well Ball 10H
Project:	Tyler County WV (NAD 27 UTM 17N us ft)	**TVD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Site:	Ball Pad	**MD Reference:**	GL 1169.65' + KB 22' @ 1191.65usft (Orion Polaris)
Well:	Ball 10H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,714.00	89.46	344.80	6,904.12	5,673.77	-2,011.42	6,001.11	0.75	0.66	-0.36
12,810.00	90.03	344.55	6,904.54	5,766.35	-2,036.79	6,097.11	0.65	0.59	-0.26
12,904.00	91.28	344.19	6,903.47	5,856.87	-2,062.12	6,191.10	1.38	1.33	-0.38
12,999.00	92.35	343.62	6,900.46	5,948.10	-2,088.44	6,286.03	1.28	1.13	-0.60
13,095.00	89.93	345.38	6,898.55	6,040.58	-2,114.09	6,382.00	3.12	-2.52	1.83
13,189.00	89.56	345.16	6,898.97	6,131.49	-2,137.99	6,476.00	0.46	-0.39	-0.23
13,284.00	90.97	345.92	6,898.53	6,223.47	-2,161.71	6,570.99	1.69	1.48	0.80
13,379.00	91.71	345.61	6,896.31	6,315.53	-2,185.06	6,665.95	0.84	0.78	-0.33
13,475.00	89.83	345.63	6,895.02	6,408.51	-2,208.90	6,761.93	1.96	-1.96	0.02
13,568.00	90.67	345.53	6,894.61	6,498.58	-2,232.06	6,854.93	0.91	0.90	-0.11
13,664.00	91.91	344.57	6,892.45	6,591.30	-2,256.82	6,950.90	1.63	1.29	-1.00
13,759.00	93.46	344.71	6,888.00	6,682.81	-2,281.95	7,045.79	1.64	1.63	0.15
13,818.00	94.57	343.85	6,883.87	6,739.46	-2,297.90	7,104.64	2.38	1.88	-1.46
Last MWD Survey at 13818' MD									
13,873.00	95.60	343.05	6,878.99	6,791.97	-2,313.50	7,159.40	2.37	1.87	-1.45
Projection to TD at 13873' MD									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
139.00	138.99	20"	20.000	26.000

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
13,818.00	6,883.87	6,739.46	-2,297.90	Last MWD Survey at 13818' MD
13,873.00	6,878.99	6,791.97	-2,313.50	Projection to TD at 13873' MD

Checked By: _____ Approved By: _____ Date: _____