

Job# 901104133
C139 25'KB

Devon

Reagan County, TX (NAD-83) Section 11, BLK 48
API# 383-38645

University 48-11 2H (200' FSL & 878' FWL)

Wellbore #1

Design: Wellbore #1

Sperry Drilling Services **Combo Report**

08 April, 2014

Well Coordinates: 31° 06' 12.26" N
101° 18' 59.35" W

North American Datum 1983
Texas Central Zone
10,366,398.01 N
1,988,901.29 E

Ground Level: 2,684.00 ft

Local Coordinate Origin:
Viewing Datum:
TVDs to System:

Centered on Well University 48-11 2H
WELL @ 2709.00ft (C139 25'KB)
N

North Reference:

Grid

Unit System:

API US Survey Feet

Version: 5000.1 Build: 65

Report Version: Midcon Combo v1.30

HALLIBURTON

Design Report for University 48-11 2H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (usft)	Easting (usft)			
0.00	0.00	0.00	-2,709.00	0.00	0.00 N	0.00 E	10,366,398.01	1,988,901.29	0.00	0.00	
100.00	0.67	42.87	-2,609.00	100.00	0.43 N	0.40 E	10,366,398.44	1,988,901.69	0.67	0.46	First GYRO Survey
200.00	0.69	21.69	-2,509.01	199.99	1.42 N	1.02 E	10,366,399.43	1,988,902.31	0.25	1.50	
300.00	0.66	38.58	-2,409.02	299.98	2.43 N	1.60 E	10,366,400.44	1,988,902.89	0.20	2.56	
400.00	0.54	6.15	-2,309.02	399.98	3.35 N	2.01 E	10,366,401.35	1,988,903.30	0.35	3.51	
500.00	0.51	16.36	-2,209.03	499.97	4.24 N	2.19 E	10,366,402.25	1,988,903.48	0.10	4.42	
600.00	0.23	353.98	-2,109.03	599.97	4.87 N	2.29 E	10,366,402.88	1,988,903.58	0.31	5.05	
700.00	0.11	298.38	-2,009.03	699.97	5.11 N	2.18 E	10,366,403.12	1,988,903.47	0.19	5.29	
800.00	0.14	43.06	-1,909.03	799.97	5.25 N	2.18 E	10,366,403.26	1,988,903.47	0.20	5.42	
900.00	0.19	327.07	-1,809.03	899.97	5.48 N	2.18 E	10,366,403.49	1,988,903.47	0.21	5.65	Final GYRO Survey
1,086.00	0.17	57.34	-1,623.03	1,085.97	5.88 N	2.24 E	10,366,403.89	1,988,903.53	0.14	6.06	First Sperry MWD Survey
1,178.00	1.86	66.70	-1,531.05	1,177.95	6.55 N	3.73 E	10,366,404.56	1,988,905.02	1.84	6.86	
1,270.00	2.94	111.00	-1,439.12	1,269.88	6.29 N	7.30 E	10,366,404.30	1,988,908.59	2.25	6.93	
1,362.00	2.99	117.36	-1,347.24	1,361.76	4.34 N	11.64 E	10,366,402.35	1,988,912.93	0.36	5.38	
1,457.00	2.14	101.65	-1,252.34	1,456.66	2.85 N	15.57 E	10,366,400.86	1,988,916.86	1.15	4.24	
1,552.00	2.12	95.48	-1,157.40	1,551.60	2.32 N	19.06 E	10,366,400.33	1,988,920.35	0.24	4.03	
1,646.00	1.92	101.89	-1,063.46	1,645.54	1.83 N	22.33 E	10,366,399.84	1,988,923.62	0.32	3.84	
1,741.00	1.86	72.70	-968.51	1,740.49	1.96 N	25.36 E	10,366,399.97	1,988,926.65	1.00	4.24	
1,836.00	1.97	74.42	-873.57	1,835.43	2.86 N	28.41 E	10,366,400.87	1,988,929.70	0.13	5.41	
1,930.00	1.91	74.40	-779.62	1,929.38	3.71 N	31.47 E	10,366,401.72	1,988,932.76	0.06	6.54	
2,025.00	1.34	80.22	-684.66	2,024.34	4.33 N	34.09 E	10,366,402.34	1,988,935.38	0.62	7.39	
2,120.00	1.33	86.46	-589.68	2,119.32	4.59 N	36.28 E	10,366,402.60	1,988,937.57	0.15	7.84	
2,215.00	1.19	82.46	-494.71	2,214.29	4.78 N	38.36 E	10,366,402.79	1,988,939.65	0.17	8.23	
2,310.00	1.19	80.46	-399.73	2,309.27	5.08 N	40.31 E	10,366,403.09	1,988,941.60	0.04	8.69	
2,405.00	1.34	85.35	-304.75	2,404.25	5.33 N	42.39 E	10,366,403.34	1,988,943.68	0.19	9.13	
2,498.00	1.09	83.16	-211.77	2,497.23	5.52 N	44.36 E	10,366,403.53	1,988,945.65	0.27	9.50	
2,593.00	0.98	83.21	-116.79	2,592.21	5.73 N	46.06 E	10,366,403.74	1,988,947.35	0.12	9.86	
2,688.00	1.12	78.67	-21.80	2,687.20	6.00 N	47.78 E	10,366,404.01	1,988,949.07	0.17	10.29	
2,782.00	1.00	80.97	72.18	2,781.18	6.31 N	49.49 E	10,366,404.32	1,988,950.78	0.14	10.76	
2,876.00	0.89	75.79	166.17	2,875.17	6.62 N	51.01 E	10,366,404.63	1,988,952.30	0.15	11.20	
2,971.00	1.46	89.22	261.15	2,970.15	6.82 N	52.93 E	10,366,404.83	1,988,954.22	0.66	11.57	
3,064.00	1.29	90.24	354.12	3,063.12	6.83 N	55.16 E	10,366,404.84	1,988,956.45	0.18	11.78	
3,159.00	1.21	90.22	449.10	3,158.10	6.82 N	57.24 E	10,366,404.83	1,988,958.52	0.08	11.96	
3,253.00	1.11	85.77	543.08	3,252.08	6.89 N	59.14 E	10,366,404.90	1,988,960.43	0.14	12.20	
3,347.00	1.08	89.10	637.06	3,346.06	6.97 N	60.93 E	10,366,404.98	1,988,962.22	0.07	12.44	
3,442.00	1.04	89.59	732.05	3,441.05	6.99 N	62.69 E	10,366,405.00	1,988,963.98	0.04	12.62	
3,549.00	0.76	81.73	839.03	3,548.03	7.10 N	64.36 E	10,366,405.11	1,988,965.65	0.29	12.88	
3,644.00	1.21	55.45	934.02	3,643.02	7.76 N	65.81 E	10,366,405.77	1,988,967.10	0.66	13.67	
3,739.00	1.87	82.86	1,028.99	3,737.99	8.52 N	68.17 E	10,366,406.53	1,988,969.46	1.02	14.64	
3,833.00	1.05	82.08	1,122.95	3,831.95	8.83 N	70.55 E	10,366,406.84	1,988,971.84	0.87	15.16	
3,928.00	0.68	66.52	1,217.94	3,926.94	9.17 N	71.93 E	10,366,407.18	1,988,973.22	0.46	15.63	

Design Report for University 48-11 2H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (usft)	Easting (usft)			
4,023.00	1.54	96.16	1,312.92	4,021.92	9.26 N	73.71 E	10,366,407.27	1,988,975.00	1.06	15.88	
4,118.00	1.28	91.69	1,407.90	4,116.90	9.09 N	76.04 E	10,366,407.10	1,988,977.33	0.30	15.92	
4,212.00	1.04	85.36	1,501.88	4,210.88	9.13 N	77.94 E	10,366,407.14	1,988,979.23	0.29	16.13	
4,307.00	0.82	77.47	1,596.86	4,305.86	9.35 N	79.47 E	10,366,407.36	1,988,980.76	0.27	16.48	
4,401.00	1.38	87.61	1,690.85	4,399.85	9.54 N	81.25 E	10,366,407.55	1,988,982.54	0.63	16.84	
4,497.00	2.20	92.48	1,786.80	4,495.80	9.51 N	84.25 E	10,366,407.52	1,988,985.54	0.87	17.08	
4,591.00	2.04	88.33	1,880.73	4,589.73	9.48 N	87.72 E	10,366,407.49	1,988,989.01	0.24	17.36	
4,685.00	1.83	88.40	1,974.68	4,683.68	9.57 N	90.90 E	10,366,407.58	1,988,992.19	0.22	17.74	
4,779.00	1.68	88.54	2,068.64	4,777.64	9.65 N	93.78 E	10,366,407.66	1,988,995.07	0.16	18.07	
4,874.00	1.53	91.82	2,163.60	4,872.60	9.64 N	96.44 E	10,366,407.65	1,988,997.72	0.19	18.31	
4,968.00	1.61	85.66	2,257.56	4,966.56	9.70 N	99.01 E	10,366,407.71	1,989,000.30	0.20	18.60	
5,062.00	1.62	79.69	2,351.53	5,060.53	10.04 N	101.63 E	10,366,408.05	1,989,002.92	0.18	19.17	
5,157.00	1.65	83.54	2,446.49	5,155.49	10.43 N	104.31 E	10,366,408.44	1,989,005.60	0.12	19.81	
5,252.00	1.55	71.03	2,541.45	5,250.45	11.00 N	106.88 E	10,366,409.01	1,989,008.17	0.38	20.61	
5,345.00	1.64	104.95	2,634.42	5,343.42	11.07 N	109.36 E	10,366,409.08	1,989,010.65	1.00	20.90	
5,439.00	1.40	99.37	2,728.38	5,437.38	10.54 N	111.79 E	10,366,408.55	1,989,013.08	0.30	20.59	
5,534.00	1.20	98.42	2,823.36	5,532.36	10.20 N	113.92 E	10,366,408.21	1,989,015.21	0.21	20.45	
5,628.00	0.96	91.98	2,917.34	5,626.34	10.03 N	115.68 E	10,366,408.04	1,989,016.97	0.29	20.43	
5,723.00	1.26	100.58	3,012.33	5,721.33	9.81 N	117.50 E	10,366,407.82	1,989,018.79	0.36	20.38	
5,818.00	1.15	101.67	3,107.30	5,816.30	9.43 N	119.46 E	10,366,407.44	1,989,020.75	0.12	20.17	
5,911.00	1.12	91.74	3,200.29	5,909.29	9.21 N	121.29 E	10,366,407.22	1,989,022.58	0.21	20.12	
6,035.00	0.84	87.92	3,324.27	6,033.27	9.21 N	123.41 E	10,366,407.22	1,989,024.70	0.23	20.31	
6,130.00	2.18	93.13	3,419.23	6,128.23	9.13 N	125.91 E	10,366,407.14	1,989,027.20	1.42	20.46	
6,225.00	1.94	83.45	3,514.17	6,223.17	9.22 N	129.31 E	10,366,407.23	1,989,030.60	0.44	20.85	
6,256.00	3.13	62.58	3,545.14	6,254.14	9.67 N	130.58 E	10,366,407.68	1,989,031.87	4.80	21.42	
6,288.00	6.02	50.65	3,577.04	6,286.04	11.13 N	132.65 E	10,366,409.14	1,989,033.94	9.46	23.07	
6,320.00	8.25	44.50	3,608.79	6,317.79	13.84 N	135.56 E	10,366,411.85	1,989,036.85	7.36	26.02	
6,351.00	10.56	33.54	3,639.37	6,348.37	17.79 N	138.69 E	10,366,415.80	1,989,039.98	9.40	30.24	
6,383.00	13.63	21.79	3,670.66	6,379.66	23.74 N	141.71 E	10,366,421.75	1,989,043.00	12.25	36.44	
6,414.00	15.68	10.40	3,700.66	6,409.66	31.25 N	143.82 E	10,366,429.26	1,989,045.11	11.38	44.11	
6,446.00	18.72	356.38	3,731.24	6,440.24	40.64 N	144.28 E	10,366,438.65	1,989,045.57	16.00	53.50	
6,477.00	21.39	358.75	3,760.35	6,469.35	51.26 N	143.84 E	10,366,449.27	1,989,045.13	9.00	64.03	
6,509.00	23.26	4.85	3,789.96	6,498.96	63.39 N	144.25 E	10,366,461.40	1,989,045.54	9.30	76.15	
6,541.00	26.20	5.13	3,819.02	6,528.02	76.72 N	145.42 E	10,366,474.73	1,989,046.71	9.19	89.54	
6,572.00	29.39	3.87	3,846.44	6,555.44	91.13 N	146.54 E	10,366,489.14	1,989,047.83	10.46	103.99	
6,604.00	32.52	5.54	3,873.88	6,582.88	107.53 N	147.90 E	10,366,505.54	1,989,049.19	10.14	120.45	
6,636.00	36.55	7.08	3,900.24	6,609.24	125.56 N	149.91 E	10,366,523.57	1,989,051.20	12.89	138.58	
6,667.00	39.85	7.89	3,924.59	6,633.59	144.56 N	152.41 E	10,366,542.57	1,989,053.70	10.77	157.73	
6,698.00	43.59	4.72	3,947.73	6,656.73	165.06 N	154.65 E	10,366,563.07	1,989,055.94	13.85	178.35	
6,730.00	47.53	0.71	3,970.14	6,679.14	187.87 N	155.71 E	10,366,585.88	1,989,057.00	15.22	201.16	
6,762.00	51.39	356.79	3,990.94	6,699.94	212.17 N	155.16 E	10,366,610.18	1,989,056.44	15.23	225.31	

Design Report for University 48-11 2H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (usft)	Easting (usft)			
6,793.00	55.86	356.03	4,009.32	6,718.32	237.07 N	153.59 E	10,366,635.08	1,989,054.88	14.55	249.97	
6,825.00	59.26	356.57	4,026.48	6,735.48	264.02 N	151.85 E	10,366,662.03	1,989,053.14	10.72	276.65	
6,857.00	61.51	357.93	4,042.29	6,751.29	291.80 N	150.52 E	10,366,689.81	1,989,051.81	7.94	304.20	
6,888.00	63.78	358.92	4,056.54	6,765.54	319.32 N	149.76 E	10,366,717.33	1,989,051.05	7.85	331.54	
6,920.00	66.75	359.15	4,069.93	6,778.93	348.38 N	149.27 E	10,366,746.39	1,989,050.56	9.30	360.43	
6,951.00	70.04	359.04	4,081.34	6,790.34	377.19 N	148.82 E	10,366,775.20	1,989,050.11	10.62	389.09	
6,983.00	73.00	358.67	4,091.48	6,800.48	407.53 N	148.21 E	10,366,805.54	1,989,049.50	9.31	419.25	
7,014.00	75.96	359.22	4,099.77	6,808.77	437.40 N	147.66 E	10,366,835.40	1,989,048.95	9.70	448.94	
7,046.00	78.75	359.70	4,106.78	6,815.78	468.61 N	147.37 E	10,366,866.62	1,989,048.66	8.84	480.01	
7,078.00	81.60	359.89	4,112.24	6,821.24	500.14 N	147.26 E	10,366,898.15	1,989,048.55	8.93	511.39	
7,109.00	84.08	0.12	4,116.10	6,825.10	530.90 N	147.26 E	10,366,928.91	1,989,048.55	8.03	542.02	
7,141.00	87.21	0.13	4,118.53	6,827.53	562.80 N	147.33 E	10,366,960.81	1,989,048.62	9.78	573.80	
7,173.00	89.73	0.42	4,119.39	6,828.39	594.79 N	147.48 E	10,366,992.80	1,989,048.77	7.93	605.67	
7,267.00	91.91	0.07	4,118.04	6,827.04	688.77 N	147.88 E	10,367,086.78	1,989,049.17	2.35	699.31	
7,360.00	91.75	359.04	4,115.07	6,824.07	781.72 N	147.16 E	10,367,179.73	1,989,048.45	1.12	791.81	
7,455.00	89.97	358.95	4,113.65	6,822.65	876.69 N	145.50 E	10,367,274.70	1,989,046.79	1.88	886.25	
7,550.00	90.10	359.11	4,113.59	6,822.59	971.68 N	143.89 E	10,367,369.68	1,989,045.18	0.22	980.70	
7,644.00	88.89	358.86	4,114.42	6,823.42	1,065.66 N	142.22 E	10,367,463.66	1,989,043.51	1.31	1,074.14	
7,739.00	88.25	359.94	4,116.79	6,825.79	1,160.62 N	141.23 E	10,367,558.63	1,989,042.52	1.32	1,168.63	
7,834.00	89.33	3.37	4,118.79	6,827.79	1,255.54 N	143.97 E	10,367,653.55	1,989,045.26	3.78	1,263.41	
7,928.00	90.40	5.07	4,119.01	6,828.01	1,349.28 N	150.89 E	10,367,747.29	1,989,052.18	2.14	1,357.40	
8,023.00	88.12	3.27	4,120.24	6,829.24	1,444.01 N	157.80 E	10,367,842.02	1,989,059.08	3.06	1,452.36	
8,117.00	90.13	6.88	4,121.68	6,830.68	1,537.61 N	166.11 E	10,367,935.62	1,989,067.40	4.40	1,546.33	
8,212.00	88.59	7.38	4,122.74	6,831.74	1,631.87 N	177.90 E	10,368,029.88	1,989,079.19	1.70	1,641.27	
8,306.00	89.93	11.03	4,123.95	6,832.95	1,724.63 N	192.93 E	10,368,122.64	1,989,094.22	4.14	1,735.01	
8,400.00	89.36	10.80	4,124.54	6,833.54	1,816.93 N	210.73 E	10,368,214.94	1,989,112.02	0.65	1,828.54	
8,495.00	88.72	11.04	4,126.13	6,835.13	1,910.20 N	228.72 E	10,368,308.20	1,989,130.01	0.72	1,923.05	
8,590.00	90.13	11.29	4,127.08	6,836.08	2,003.39 N	247.12 E	10,368,401.40	1,989,148.41	1.51	2,017.52	
8,678.00	89.66	10.02	4,127.24	6,836.24	2,089.87 N	263.39 E	10,368,487.88	1,989,164.68	1.54	2,105.12	
8,772.00	89.63	8.66	4,127.82	6,836.82	2,182.62 N	278.64 E	10,368,580.63	1,989,179.93	1.45	2,198.87	
8,867.00	89.83	7.38	4,128.27	6,837.27	2,276.69 N	291.90 E	10,368,674.70	1,989,193.19	1.36	2,293.75	
8,962.00	86.70	3.95	4,131.15	6,840.15	2,371.16 N	301.27 E	10,368,769.16	1,989,202.56	4.89	2,388.67	
9,056.00	86.23	3.51	4,136.94	6,845.94	2,464.78 N	307.37 E	10,368,862.78	1,989,208.66	0.68	2,482.46	
9,151.00	86.60	1.85	4,142.89	6,851.89	2,559.49 N	311.81 E	10,368,957.49	1,989,213.10	1.79	2,577.18	
9,245.00	89.09	3.30	4,146.42	6,855.42	2,653.31 N	316.03 E	10,369,051.32	1,989,217.32	3.06	2,671.01	
9,340.00	90.40	3.65	4,146.84	6,855.84	2,748.14 N	321.79 E	10,369,146.14	1,989,223.08	1.43	2,765.97	
9,435.00	88.62	2.40	4,147.66	6,856.66	2,843.00 N	326.80 E	10,369,241.00	1,989,228.09	2.29	2,860.89	
9,530.00	89.33	3.47	4,149.35	6,858.35	2,937.85 N	331.66 E	10,369,335.86	1,989,232.95	1.35	2,955.80	
9,625.00	90.74	4.26	4,149.30	6,858.30	3,032.63 N	338.07 E	10,369,430.64	1,989,239.36	1.70	3,050.77	
9,720.00	90.74	2.91	4,148.07	6,857.07	3,127.44 N	344.01 E	10,369,525.44	1,989,245.29	1.42	3,145.72	
9,814.00	88.79	1.74	4,148.46	6,857.46	3,221.35 N	347.82 E	10,369,619.36	1,989,249.11	2.42	3,239.60	

Design Report for University 48-11 2H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (usft)	Easting (usft)			
9,908.00	88.86	1.40	4,150.38	6,859.38	3,315.30 N	350.39 E	10,369,713.30	1,989,251.68	0.37	3,333.39	
10,003.00	88.82	1.23	4,152.31	6,861.31	3,410.25 N	352.57 E	10,369,808.26	1,989,253.86	0.18	3,428.16	
10,098.00	90.24	2.45	4,153.09	6,862.09	3,505.20 N	355.62 E	10,369,903.20	1,989,256.91	1.97	3,522.99	
10,193.00	90.54	2.92	4,152.44	6,861.44	3,600.09 N	360.07 E	10,369,998.09	1,989,261.36	0.59	3,617.90	
10,288.00	90.94	2.51	4,151.21	6,860.21	3,694.98 N	364.57 E	10,370,092.98	1,989,265.86	0.60	3,712.80	
10,383.00	88.32	2.58	4,151.83	6,860.83	3,789.87 N	368.79 E	10,370,187.87	1,989,270.08	2.76	3,807.69	
10,477.00	89.26	4.28	4,153.81	6,862.81	3,883.68 N	374.41 E	10,370,281.68	1,989,275.70	2.07	3,901.62	
10,572.00	89.83	5.63	4,154.56	6,863.56	3,978.32 N	382.62 E	10,370,376.32	1,989,283.91	1.54	3,996.61	
10,667.00	89.49	5.67	4,155.13	6,864.13	4,072.85 N	391.97 E	10,370,470.86	1,989,293.26	0.36	4,091.61	
10,761.00	90.17	6.14	4,155.41	6,864.41	4,166.35 N	401.64 E	10,370,564.36	1,989,302.93	0.88	4,185.60	
10,856.00	89.70	4.23	4,155.52	6,864.52	4,260.96 N	410.23 E	10,370,658.96	1,989,311.52	2.07	4,280.60	
10,952.00	90.34	4.28	4,155.48	6,864.48	4,356.70 N	417.35 E	10,370,754.70	1,989,318.64	0.67	4,376.58	
11,046.00	89.02	3.42	4,156.01	6,865.01	4,450.48 N	423.66 E	10,370,848.48	1,989,324.95	1.68	4,470.55	
11,141.00	89.53	3.69	4,157.21	6,866.21	4,545.29 N	429.55 E	10,370,943.29	1,989,330.84	0.61	4,565.51	
11,236.00	89.70	3.58	4,157.85	6,866.85	4,640.10 N	435.57 E	10,371,038.10	1,989,336.86	0.21	4,660.47	
11,330.00	88.99	3.09	4,158.92	6,867.92	4,733.93 N	441.04 E	10,371,131.93	1,989,342.33	0.92	4,754.41	
11,424.00	90.17	3.97	4,159.61	6,868.61	4,827.75 N	446.83 E	10,371,225.75	1,989,348.12	1.57	4,848.37	
11,519.00	88.59	2.50	4,160.64	6,869.64	4,922.58 N	452.19 E	10,371,320.58	1,989,353.48	2.27	4,943.30	
11,575.00	89.10	3.29	4,161.77	6,870.77	4,978.50 N	455.02 E	10,371,376.50	1,989,356.31	1.68	4,999.25	Final Sperry MWD Survey
11,626.00	89.10	3.29	4,162.57	6,871.57	5,029.41 N	457.94 E	10,371,427.41	1,989,359.23	0.00	5,050.21	Projection to TD

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
100.00	100.00	0.43	0.40	First GYRO Survey
900.00	899.97	5.48	2.18	Final GYRO Survey
1,086.00	1,085.97	5.88	2.24	First Sperry MWD Survey
11,575.00	6,870.77	4,978.50	455.02	Final Sperry MWD Survey
11,626.00	6,871.57	5,029.41	457.94	Projection to TD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	5.18	Slot	0.00	0.00	0.00

Design Report for University 48-11 2H - Wellbore #1

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
100.00	900.00	VES GYROS	NS-Gyro-MS
1,086.00	11,626.00	Sperry MWD Surveys	MWD

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
University 48-11 2H BHL ()	0.00	0.00	6,870.00	5,030.20	456.34	10,371,428.20	1,989,357.63	31° 7' 2.092 N	101° 18' 54.613 W
- actual wellpath misses target center by 2.38ft at 11626.00ft MD (6871.57 TVD, 5029.41 N, 457.94 E)									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	1.69 °/100usft	Maximum Dogleg over Survey:	16.00 °/100usft at 6,446.00 ft
Net Tortousity applicable to Plans:	0.30 °/100usft	Directional Difficulty Index:	6.237

Audit Info

North Reference Sheet for Section 11, BLK 48 - University 48-11 2H - Wellbore #1

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to WELL @ 2709.00ft (C139 25'KB). Northing and Easting are relative to University 48-11 2H

Coordinate System is US State Plane 1983, Texas Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 100° 20' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:31° 53' 0.000 N°

False Easting: 2,296,583.33usft, False Northing: 9,842,500.00usft, Scale Reduction: 0.99988332

Grid Coordinates of Well: 10,366,398.01 usft N, 1,988,901.29 usft E

Geographical Coordinates of Well: 31° 06' 12.26" N, 101° 18' 59.35" W

Grid Convergence at Surface is: -0.51°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,626.00ft
the Bottom Hole Displacement is 5,050.21ft in the Direction of 5.20° (Grid).

Magnetic Convergence at surface is: -6.63° (19 March 2014, , BGGM2013)

