

Shell Exploration & Production Co. Inc.

Harper Co. (NAD-27)

Sec 15-T34S-R07W

Albright Croft Farms 3407 #15-2H/ Job# 9199274/ Nabors 774

Wellbore #1

Plan: Design 040912 A5

Sperry Drilling Services

Combo Report With Grid North & True North

09 April, 2012

Well Coordinates: 151,018.73 N, 2,124,525.73 E (37° 04' 50.28" N, 098° 04' 23.39" W)

Ground Level: 1,393.72 ft

Local Coordinate Origin:	Centered on Well Albright Croft Farms 3407 #15-2H/ Job# 9199274/ Nabors 774
Viewing Datum:	Well @ 1415.40ft
TVDs to System:	N
North Reference:	True
Unit System:	API-US New

Version: 2003.21 Build: 43

HALLIBURTON

Plan Report for Albright Croft Farms 3407 #15-2H/ Job# 9199274/ Nabors 774 - Design 040912 A5

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
0.00	0.00	359.74	0.00	-1,415.40	0.00	0.00 N	0.00 E	151,018.73	2,124,525.73	0.00	0.00	
116.00	0.66	309.73	309.99	-1,299.40	116.00	0.43 N	0.51 W	151,019.15	2,124,525.22	0.57	-0.44	
178.00	0.81	318.12	318.38	-1,237.41	177.99	0.99 N	1.08 W	151,019.71	2,124,524.65	0.30	-1.02	
239.00	0.65	319.83	320.09	-1,176.41	238.99	1.57 N	1.58 W	151,020.29	2,124,524.14	0.26	-1.62	
334.00	0.34	238.82	239.08	-1,081.42	333.98	1.84 N	2.17 W	151,020.56	2,124,523.55	0.72	-1.90	
426.00	1.64	196.40	196.66	-989.43	425.97	0.44 N	2.78 W	151,019.16	2,124,522.95	1.53	-0.52	
518.00	3.37	184.52	184.78	-897.52	517.88	3.52 S	3.39 W	151,015.20	2,124,522.36	1.95	3.42	
610.00	5.14	183.75	184.01	-805.78	609.62	10.32 S	3.90 W	151,008.39	2,124,521.88	1.92	10.21	
702.00	5.48	187.59	187.85	-714.17	701.23	18.78 S	4.79 W	150,999.92	2,124,521.03	0.53	18.64	
744.00	5.22	185.93	186.19	-672.36	743.04	22.67 S	5.27 W	150,996.03	2,124,520.57	0.72	22.51	Tie-On
800.00	4.38	185.93	186.19	-616.55	798.85	27.33 S	5.77 W	150,991.37	2,124,520.08	1.50	27.15	9 5/8"
900.00	2.88	185.93	186.19	-516.76	898.64	33.62 S	6.46 W	150,985.08	2,124,519.43	1.50	33.43	
1,000.00	1.38	185.93	186.19	-416.83	998.57	37.32 S	6.86 W	150,981.38	2,124,519.05	1.50	37.11	
1,005.43	1.30	185.93	186.19	-411.40	1,004.00	37.44 S	6.87 W	150,981.25	2,124,519.03	1.50	37.23	Hutchinson Salt Top
1,092.00	0.00	359.74	0.00	-324.84	1,090.56	38.42 S	6.98 W	150,980.28	2,124,518.93	1.50	38.21	Vertical
1,100.00	0.00	359.74	0.00	-316.84	1,098.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
1,200.00	0.00	359.74	0.00	-216.84	1,198.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
1,300.00	0.00	359.74	0.00	-116.84	1,298.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
1,400.00	0.00	359.74	0.00	-16.84	1,398.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
1,500.00	0.00	359.74	0.00	83.16	1,498.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
1,579.44	0.00	359.74	0.00	162.60	1,578.00	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	Hutchinson Salt Base
1,600.00	0.00	359.74	0.00	183.16	1,598.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
1,700.00	0.00	359.74	0.00	283.16	1,698.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
1,800.00	0.00	359.74	0.00	383.16	1,798.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
1,900.00	0.00	359.74	0.00	483.16	1,898.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,000.00	0.00	359.74	0.00	583.16	1,998.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,100.00	0.00	359.74	0.00	683.16	2,098.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,200.00	0.00	359.74	0.00	783.16	2,198.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,300.00	0.00	359.74	0.00	883.16	2,298.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,400.00	0.00	359.74	0.00	983.16	2,398.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,500.00	0.00	359.74	0.00	1,083.16	2,498.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,600.00	0.00	359.74	0.00	1,183.16	2,598.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,700.00	0.00	359.74	0.00	1,283.16	2,698.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,800.00	0.00	359.74	0.00	1,383.16	2,798.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
2,900.00	0.00	359.74	0.00	1,483.16	2,898.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,000.00	0.00	359.74	0.00	1,583.16	2,998.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,100.00	0.00	359.74	0.00	1,683.16	3,098.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	

Plan Report for Albright Croft Farms 3407 #15-2H/ Job# 9199274/ Nabors 774 - Design 040912 A5

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
3,200.00	0.00	359.74	0.00	1,783.16	3,198.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,300.00	0.00	359.74	0.00	1,883.16	3,298.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,400.00	0.00	359.74	0.00	1,983.16	3,398.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,500.00	0.00	359.74	0.00	2,083.16	3,498.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,600.00	0.00	359.74	0.00	2,183.16	3,598.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,700.00	0.00	359.74	0.00	2,283.16	3,698.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,800.00	0.00	359.74	0.00	2,383.16	3,798.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,900.00	0.00	359.74	0.00	2,483.16	3,898.56	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	
3,978.24	0.00	359.74	0.00	2,561.40	3,976.80	38.42 S	6.98 W	150,980.28	2,124,518.93	0.00	38.21	KOP
4,000.00	1.74	178.02	178.28	2,583.16	3,998.56	38.75 S	6.97 W	150,979.95	2,124,518.94	8.00	38.54	
4,050.00	5.74	178.02	178.28	2,633.04	4,048.44	42.01 S	6.87 W	150,976.69	2,124,519.06	8.00	41.80	
4,100.00	9.74	178.02	178.28	2,682.58	4,097.98	48.74 S	6.67 W	150,969.96	2,124,519.29	8.00	48.53	
4,107.13	10.31	178.02	178.28	2,689.60	4,105.00	49.98 S	6.63 W	150,968.72	2,124,519.33	8.00	49.77	Iola Limestone
4,150.00	13.74	178.02	178.28	2,731.52	4,146.92	58.91 S	6.36 W	150,959.79	2,124,519.64	8.00	58.70	
4,200.00	17.74	178.02	178.28	2,779.64	4,195.04	72.46 S	5.96 W	150,946.24	2,124,520.11	8.00	72.27	
4,250.00	21.74	178.02	178.28	2,826.69	4,242.09	89.34 S	5.45 W	150,929.36	2,124,520.69	8.00	89.15	
4,300.00	25.74	178.02	178.28	2,872.45	4,287.85	109.46 S	4.85 W	150,909.25	2,124,521.39	8.00	109.28	
4,327.63	27.95	178.02	178.28	2,897.10	4,312.50	121.93 S	4.47 W	150,896.78	2,124,521.82	8.00	121.75	Hushpuckney Shale
4,350.00	29.74	178.02	178.28	2,916.69	4,332.09	132.72 S	4.15 W	150,885.99	2,124,522.19	8.00	132.55	
4,400.00	33.74	178.02	178.28	2,959.20	4,374.60	159.00 S	3.36 W	150,859.71	2,124,523.10	8.00	158.84	
4,450.00	37.74	178.02	178.28	2,999.78	4,415.18	188.19 S	2.49 W	150,830.53	2,124,524.11	8.00	188.04	
4,500.00	41.74	178.02	178.28	3,038.22	4,453.62	220.14 S	1.53 W	150,798.59	2,124,525.21	8.00	220.00	
4,550.00	45.74	178.02	178.28	3,074.34	4,489.74	254.68 S	0.49 W	150,764.05	2,124,526.41	8.00	254.57	
4,600.00	49.74	178.02	178.28	3,107.95	4,523.35	291.66 S	0.62 E	150,727.07	2,124,527.69	8.00	291.56	
4,650.00	53.74	178.02	178.28	3,138.91	4,554.31	330.90 S	1.79 E	150,687.84	2,124,529.04	8.00	330.82	
4,700.00	57.74	178.02	178.28	3,167.05	4,582.45	372.20 S	3.03 E	150,646.55	2,124,530.47	8.00	372.13	
4,728.24	60.00	178.02	178.28	3,181.65	4,597.05	396.36 S	3.76 E	150,622.39	2,124,531.31	8.00	396.30	60° Inc
4,800.00	60.00	178.02	178.28	3,217.53	4,632.93	458.48 S	5.62 E	150,560.28	2,124,533.45	0.00	458.45	
4,878.24	60.00	178.02	178.28	3,256.65	4,672.05	526.20 S	7.65 E	150,492.57	2,124,535.79	0.00	526.21	EOH
4,900.00	61.74	178.02	178.28	3,267.24	4,682.64	545.20 S	8.22 E	150,473.57	2,124,536.45	8.00	545.22	
4,950.00	65.74	178.02	178.28	3,289.36	4,704.76	590.01 S	9.57 E	150,428.77	2,124,538.00	8.00	590.05	
5,000.00	69.74	178.02	178.28	3,308.29	4,723.69	636.26 S	10.95 E	150,382.53	2,124,539.60	8.00	636.31	
5,050.00	73.74	178.02	178.28	3,323.96	4,739.36	683.71 S	12.38 E	150,335.08	2,124,541.24	8.00	683.78	
5,052.31	73.92	178.02	178.28	3,324.60	4,740.00	685.93 S	12.44 E	150,332.87	2,124,541.32	8.00	686.00	Miss Limestone
5,100.00	77.74	178.02	178.28	3,336.27	4,751.67	732.14 S	13.83 E	150,286.66	2,124,542.92	8.00	732.23	
5,150.00	81.74	178.02	178.28	3,345.18	4,760.58	781.30 S	15.31 E	150,237.50	2,124,544.62	8.00	781.42	
5,200.00	85.74	178.02	178.28	3,350.63	4,766.03	830.97 S	16.80 E	150,187.84	2,124,546.33	8.00	831.11	

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Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
5,249.53	89.70	178.02	178.28	3,352.60	4,768.00	880.43 S	18.28 E	150,138.39	2,124,548.05	8.00	880.60	Land Point
5,300.00	89.70	178.02	178.28	3,352.86	4,768.26	930.88 S	19.80 E	150,087.95	2,124,549.79	0.00	931.06	
5,369.00	89.70	178.02	178.28	3,353.23	4,768.63	999.85 S	21.87 E	150,018.99	2,124,552.18	0.00	1,000.06	7"
5,400.00	89.70	178.02	178.28	3,353.39	4,768.79	1,030.83 S	22.80 E	149,988.01	2,124,553.25	0.00	1,031.06	
5,500.00	89.70	178.02	178.28	3,353.91	4,769.31	1,130.79 S	25.80 E	149,888.07	2,124,556.71	0.00	1,131.06	
5,600.00	89.70	178.02	178.28	3,354.44	4,769.84	1,230.74 S	28.80 E	149,788.14	2,124,560.17	0.00	1,231.06	
5,700.00	89.70	178.02	178.28	3,354.96	4,770.36	1,330.69 S	31.80 E	149,688.20	2,124,563.63	0.00	1,331.06	
5,800.00	89.70	178.02	178.28	3,355.48	4,770.88	1,430.65 S	34.80 E	149,588.26	2,124,567.08	0.00	1,431.06	
5,900.00	89.70	178.02	178.28	3,356.01	4,771.41	1,530.60 S	37.80 E	149,488.32	2,124,570.54	0.00	1,531.06	
6,000.00	89.70	178.02	178.28	3,356.53	4,771.93	1,630.55 S	40.80 E	149,388.38	2,124,574.00	0.00	1,631.05	
6,100.00	89.70	178.02	178.28	3,357.05	4,772.45	1,730.51 S	43.80 E	149,288.44	2,124,577.46	0.00	1,731.05	
6,200.00	89.70	178.02	178.28	3,357.58	4,772.98	1,830.46 S	46.80 E	149,188.50	2,124,580.91	0.00	1,831.05	
6,300.00	89.70	178.02	178.28	3,358.10	4,773.50	1,930.41 S	49.80 E	149,088.57	2,124,584.37	0.00	1,931.05	
6,400.00	89.70	178.02	178.28	3,358.62	4,774.02	2,030.37 S	52.80 E	148,988.63	2,124,587.83	0.00	2,031.05	
6,500.00	89.70	178.02	178.28	3,359.15	4,774.55	2,130.32 S	55.80 E	148,888.69	2,124,591.29	0.00	2,131.05	
6,600.00	89.70	178.02	178.28	3,359.67	4,775.07	2,230.28 S	58.80 E	148,788.75	2,124,594.74	0.00	2,231.05	
6,700.00	89.70	178.02	178.28	3,360.19	4,775.59	2,330.23 S	61.80 E	148,688.81	2,124,598.20	0.00	2,331.04	
6,800.00	89.70	178.02	178.28	3,360.72	4,776.12	2,430.18 S	64.80 E	148,588.87	2,124,601.65	0.00	2,431.04	
6,900.00	89.70	178.02	178.28	3,361.24	4,776.64	2,530.14 S	67.80 E	148,488.93	2,124,605.11	0.00	2,531.04	
7,000.00	89.70	178.02	178.28	3,361.77	4,777.17	2,630.09 S	70.79 E	148,388.99	2,124,608.57	0.00	2,631.04	
7,100.00	89.70	178.02	178.28	3,362.29	4,777.69	2,730.04 S	73.79 E	148,289.06	2,124,612.02	0.00	2,731.04	
7,200.00	89.70	178.02	178.28	3,362.81	4,778.21	2,830.00 S	76.79 E	148,189.12	2,124,615.48	0.00	2,831.04	
7,300.00	89.70	178.02	178.28	3,363.34	4,778.74	2,929.95 S	79.79 E	148,089.18	2,124,618.93	0.00	2,931.03	
7,400.00	89.70	178.02	178.28	3,363.86	4,779.26	3,029.90 S	82.78 E	147,989.24	2,124,622.39	0.00	3,031.03	
7,500.00	89.70	178.02	178.28	3,364.38	4,779.78	3,129.86 S	85.78 E	147,889.30	2,124,625.84	0.00	3,131.03	
7,600.00	89.70	178.02	178.28	3,364.91	4,780.31	3,229.81 S	88.78 E	147,789.36	2,124,629.30	0.00	3,231.03	
7,700.00	89.70	178.02	178.28	3,365.43	4,780.83	3,329.77 S	91.78 E	147,689.42	2,124,632.75	0.00	3,331.03	
7,800.00	89.70	178.02	178.28	3,365.96	4,781.36	3,429.72 S	94.77 E	147,589.49	2,124,636.21	0.00	3,431.03	
7,900.00	89.70	178.02	178.28	3,366.48	4,781.88	3,529.67 S	97.77 E	147,489.55	2,124,639.66	0.00	3,531.03	
8,000.00	89.70	178.02	178.28	3,367.00	4,782.40	3,629.63 S	100.77 E	147,389.61	2,124,643.11	0.00	3,631.02	
8,100.00	89.70	178.02	178.28	3,367.53	4,782.93	3,729.58 S	103.76 E	147,289.67	2,124,646.57	0.00	3,731.02	
8,200.00	89.70	178.02	178.28	3,368.05	4,783.45	3,829.53 S	106.76 E	147,189.73	2,124,650.02	0.00	3,831.02	
8,300.00	89.70	178.02	178.28	3,368.57	4,783.97	3,929.49 S	109.75 E	147,089.79	2,124,653.48	0.00	3,931.02	
8,400.00	89.70	178.02	178.28	3,369.10	4,784.50	4,029.44 S	112.75 E	146,989.85	2,124,656.93	0.00	4,031.02	
8,500.00	89.70	178.02	178.28	3,369.62	4,785.02	4,129.40 S	115.75 E	146,889.91	2,124,660.38	0.00	4,131.02	
8,600.00	89.70	178.02	178.28	3,370.14	4,785.54	4,229.35 S	118.74 E	146,789.97	2,124,663.83	0.00	4,231.02	
8,700.00	89.70	178.02	178.28	3,370.67	4,786.07	4,329.30 S	121.74 E	146,690.04	2,124,667.29	0.00	4,331.01	

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Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
8,800.00	89.70	178.02	178.28	3,371.19	4,786.59	4,429.26 S	124.73 E	146,590.10	2,124,670.74	0.00	4,431.01	
8,900.00	89.70	178.02	178.28	3,371.72	4,787.12	4,529.21 S	127.73 E	146,490.16	2,124,674.19	0.00	4,531.01	
9,000.00	89.70	178.02	178.28	3,372.24	4,787.64	4,629.16 S	130.72 E	146,390.22	2,124,677.64	0.00	4,631.01	
9,100.00	89.70	178.02	178.28	3,372.76	4,788.16	4,729.12 S	133.71 E	146,290.28	2,124,681.10	0.00	4,731.01	
9,200.00	89.70	178.02	178.28	3,373.29	4,788.69	4,829.07 S	136.71 E	146,190.34	2,124,684.55	0.00	4,831.01	
9,300.00	89.70	178.02	178.28	3,373.81	4,789.21	4,929.03 S	139.70 E	146,090.40	2,124,688.00	0.00	4,931.01	
9,400.00	89.70	178.02	178.28	3,374.33	4,789.73	5,028.98 S	142.70 E	145,990.46	2,124,691.45	0.00	5,031.00	
9,500.00	89.70	178.02	178.28	3,374.86	4,790.26	5,128.93 S	145.69 E	145,890.53	2,124,694.90	0.00	5,131.00	
9,603.40	89.70	178.02	178.28	3,375.40	4,790.80	5,232.28 S	148.78 E	145,787.19	2,124,698.47	0.00	5,234.40	TD at 9603.40

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
744.00	743.04	-22.67	-5.27	Tie-On
1,092.00	1,090.56	-38.42	-6.98	Vertical
3,978.24	3,976.80	-38.42	-6.98	KOP
4,728.24	4,597.05	-396.36	3.76	60° Inc
4,878.24	4,672.05	-526.20	7.65	EOH
5,249.53	4,768.00	-880.43	18.28	Land Point
9,603.40	4,790.80	-5,232.28	148.78	TD at 9603.40

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
TD	No Target (Freehand)	178.37	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
116.00	744.00	MWD	MWD+SC
744.00	9,603.40	Design 040912 A5	MWD+SC

Plan Report for Albright Croft Farms 3407 #15-2H/ Job# 9199274/ Nabors 774 - Design 040912 A5**Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
800.00	798.85	9 5/8"	9-5/8	12-1/4
5,369.00	4,768.63	7"	7	9-5/8

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	TVDSS (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,005.43	1,004.00	-411.40	Hutchinson Salt Top		0.00	
1,579.44	1,578.00	162.60	Hutchinson Salt Base		0.00	
4,107.13	4,105.00	2,689.60	Iola Limestone		0.00	
4,327.63	4,312.50	2,897.10	Hushpuckney Shale		0.00	
5,052.31	4,740.00	3,324.60	Miss Limestone		0.00	

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Abandoned Well - plan misses target center by 3401.78ft at 15.63ft MD (15.63 TVD, 0.01 N, -0.01 E) - Circle (radius 1,500.00)	0.00	0.00	0.00	3,315.65	-760.51	154,330.85	2,123,750.05	37° 5' 23.063 N	98° 4' 32.780 W
PBHL ABF 3407 15- - plan hits target center - Point	0.00	0.00	4,790.80	-5,232.28	148.78	145,787.19	2,124,698.47	37° 3' 58.549 N	98° 4' 21.558 W

Directional Difficulty Index

Average Dogleg over Survey:	1.07 °/100ft	Maximum Dogleg over Survey:	8.00 °/100ft at 4,728.24 ft
Net Tortousity applicable to Plans:	1.07 °/100ft	Directional Difficulty Index:	6.092

Audit Info

North Reference Sheet for Sec 15-T34S-R07W - Albright Croft Farms 3407 #15-2H/ Job# 9199274/ Nabors 774 - Wellbore #1

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

Vertical Depths are relative to Well @ 1415.40ft. Northing and Easting are relative to Albright Croft Farms 3407 #15-2H/ Job# 9199274/ Nabors 774

Coordinate System is US State Plane 1927 (Exact solution), Kansas South 1502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 98° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:37° 16' 0.000 N°

False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 1.00004177

Grid Coordinates of Well: 151,018.73 ft N, 2,124,525.73 ft E

Geographical Coordinates of Well: 37° 04' 50.28" N, 098° 04' 23.39" W

Grid Convergence at Surface is: 0.26°

Based upon Minimum Curvature type calculations, at a Measured Depth of 9,603.40ft the Bottom Hole Displacement is 5,234.40ft in the Direction of 178.37° (True).

Magnetic Convergence at surface is: -4.49° (12 January 2012, , BGGM2011)

