

Conoco Phillips Company

Arapahoe County, Colorado

Sec. 11-T4S-R64W

Youngberg 10-11-1H

Plan C

Plan: Plan C Rev 0

Sperry Drilling Services Proposal Report

18 June, 2013

Well Coordinates: 1,686,122.86 N, 3,278,652.93 E (39° 42' 46.94" N, 104° 30' 34.19" W)

Ground Level: 5,673.00 ft

Local Coordinate Origin:

Centered on Well Youngberg 10-11-1H

Viewing Datum:

RKB 24 ft @ 5697.00ft (H&P 280)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Version: 2003.16 Build: 43I

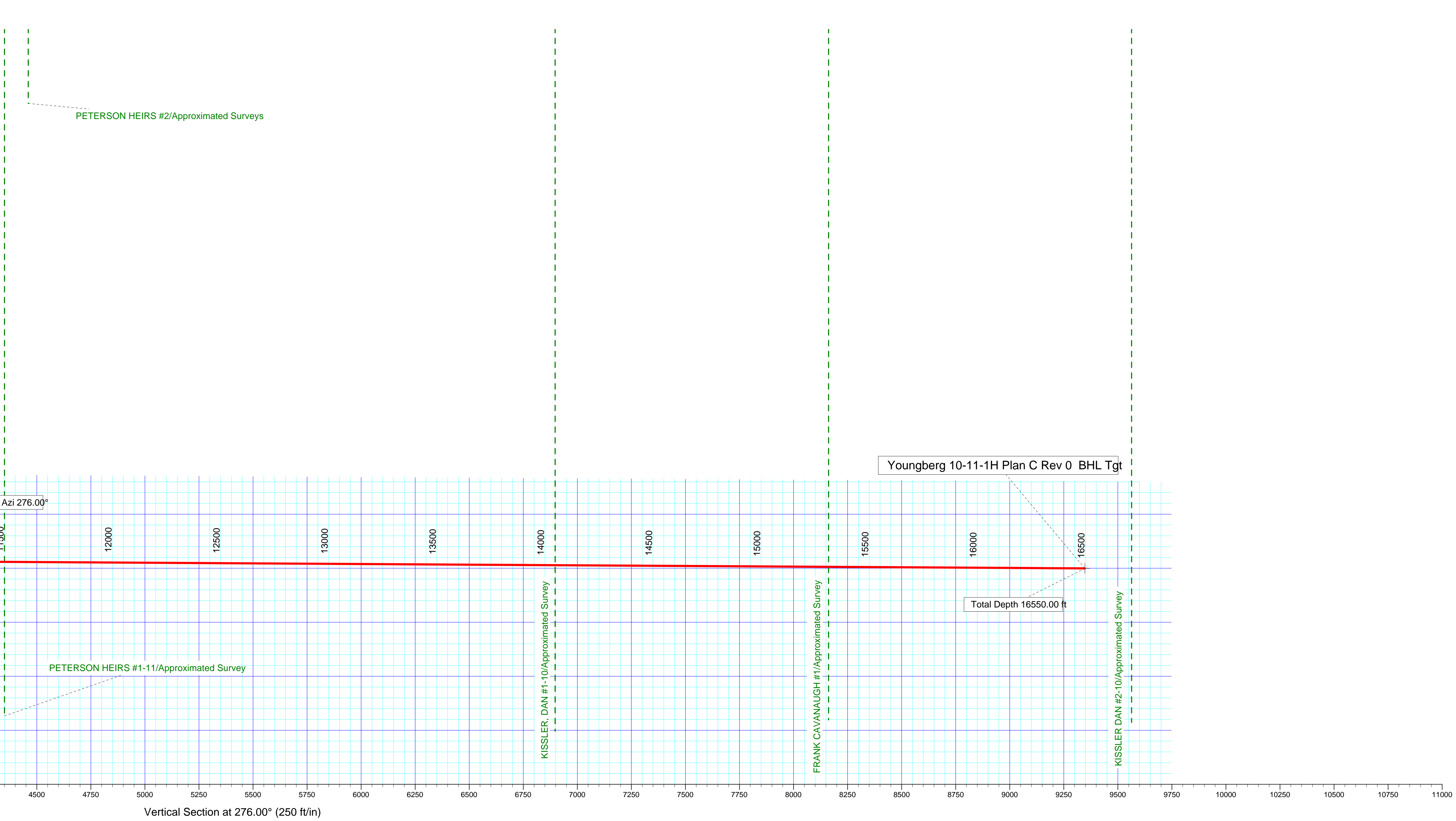
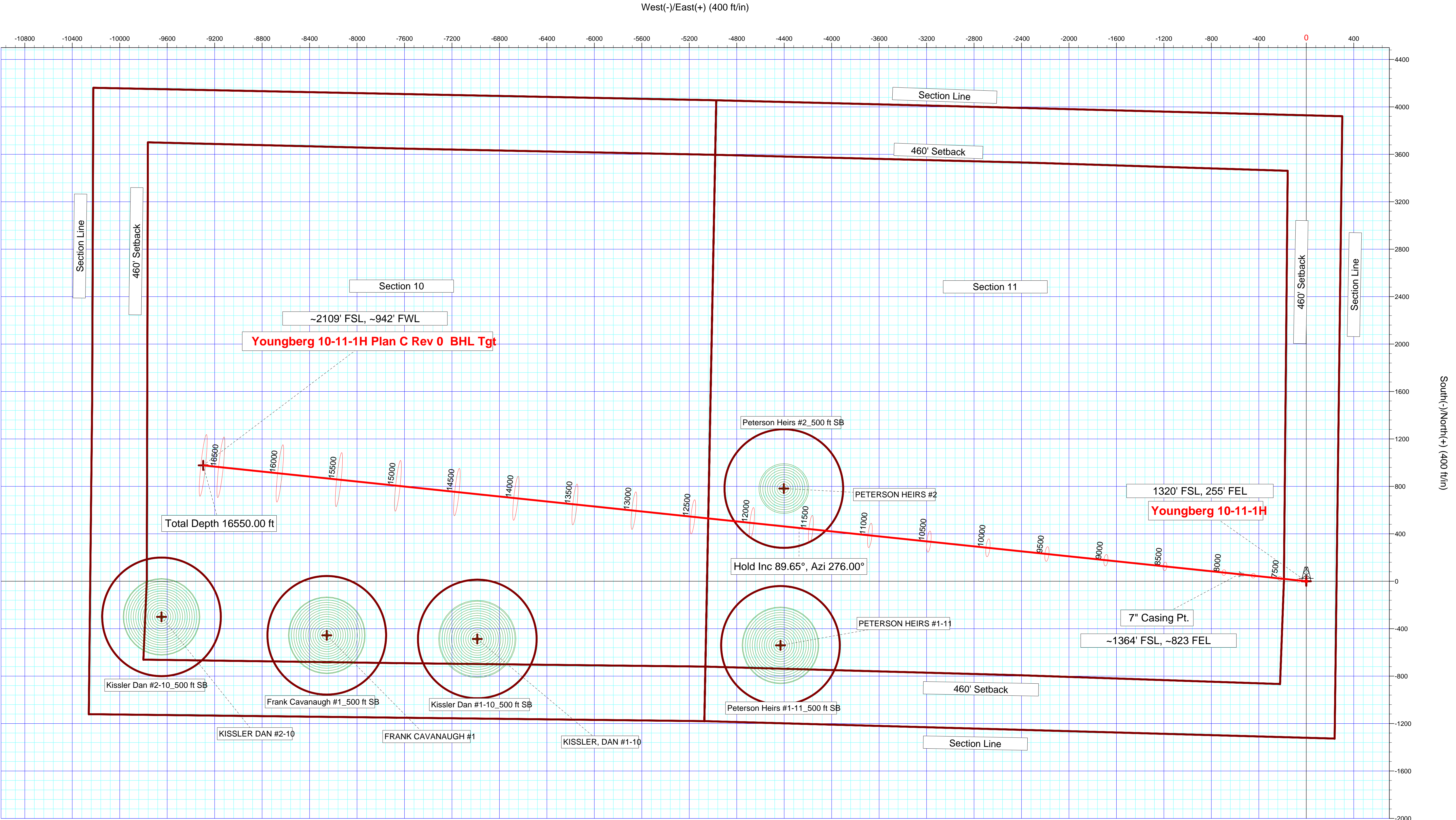
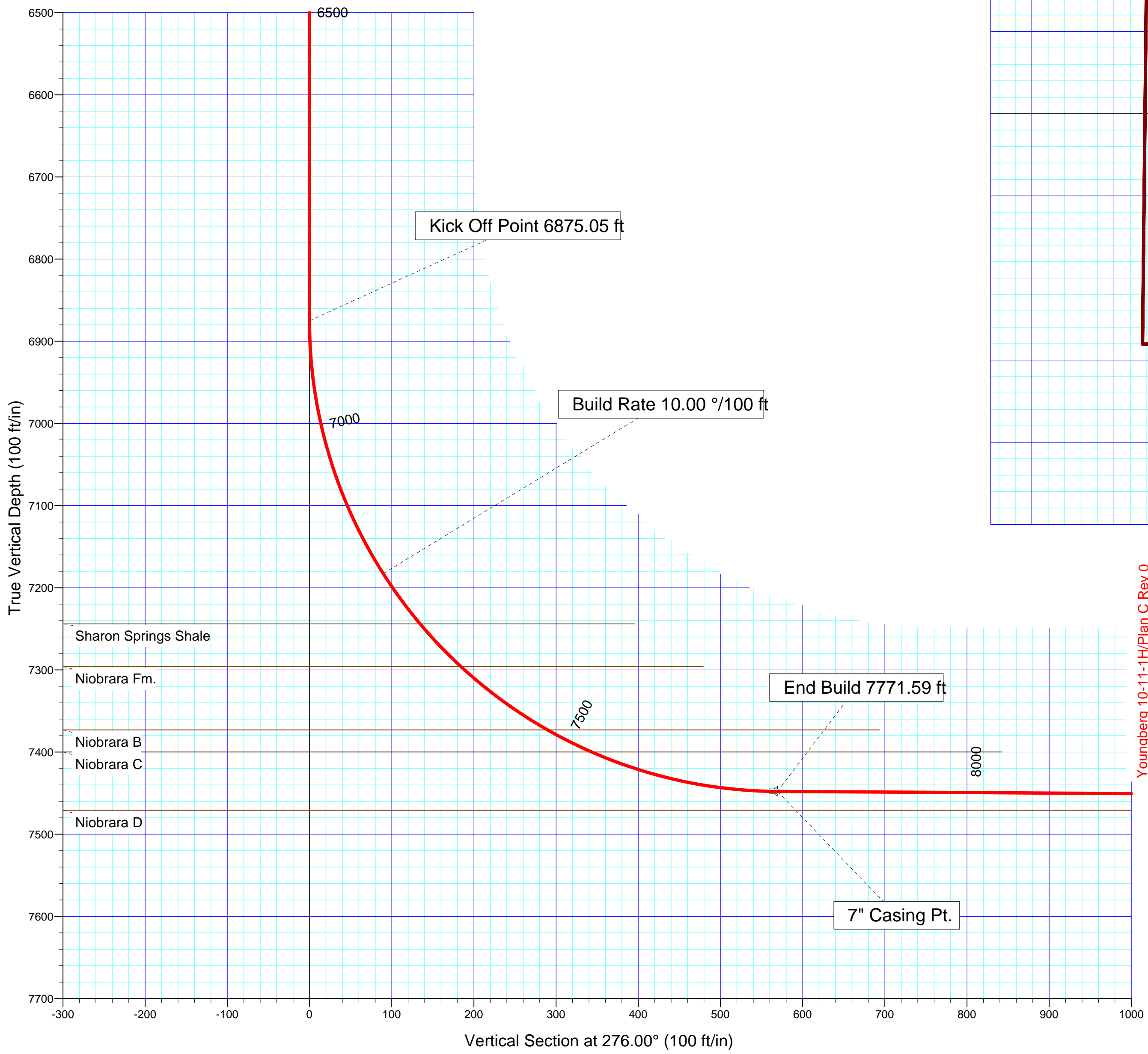
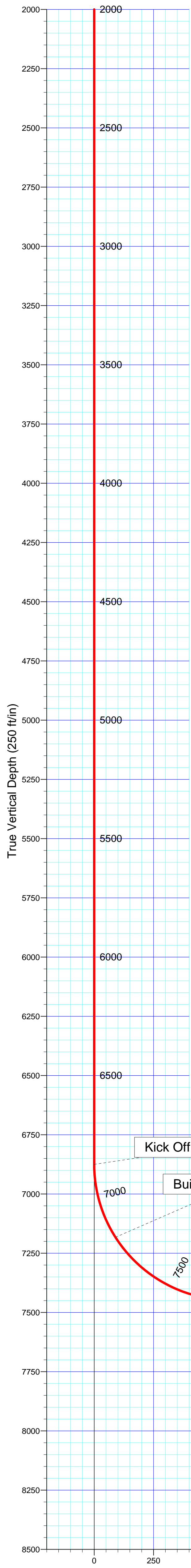
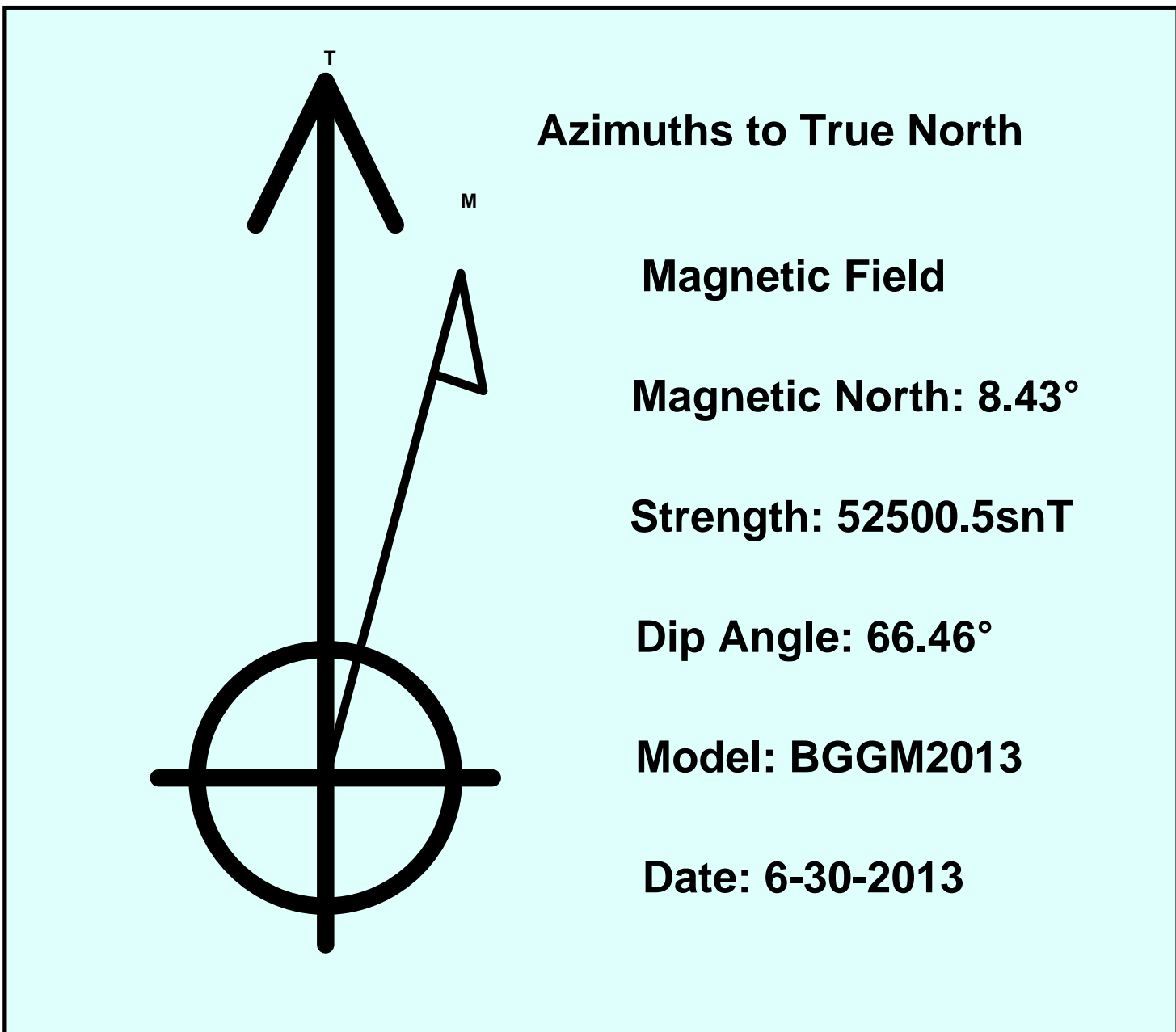
HALLIBURTON

Project: Arapahoe County, Colorado
Site: Sec. 11-T4S-R64W
Well: Youngberg 10-11-1H
Wellbore: Plan C
Plan: Plan C Rev 0

Conoco Phillips Company



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6875.05	0.00	0.00	6875.05	0.00	0.00	0.00	0.00	0.00	
3	7771.59	89.65	276.00	7448.00	59.53	-566.38	10.00	276.00	569.50	
4	16550.00	89.65	276.00	7501.00	977.11	-9296.54	0.00	0.00	9347.75	Youngberg 10-11-1H Plan C Rev 0 BHL Tgt



Plan Report for Youngberg 10-11-1H - Plan C Rev 0

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,597.00	0.00	0.00	1,597.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Aquifer										
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,742.00	0.00	0.00	1,742.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Shale										
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Plan Report for Youngberg 10-11-1H - Plan C Rev 0

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,875.05	0.00	0.00	6,875.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kick Off Point 6875.05 ft										
6,900.00	2.49	276.00	6,899.99	0.06	-0.54	0.54	10.00	10.00	0.00	276.00
7,000.00	12.49	276.00	6,999.01	1.42	-13.50	13.57	10.00	10.00	0.00	0.00
7,100.00	22.49	276.00	7,094.27	4.56	-43.36	43.59	10.00	10.00	0.00	0.00
7,200.00	32.49	276.00	7,182.86	9.38	-89.21	89.70	10.00	10.00	0.00	0.00
Build Rate 10.00 °/100 ft										
7,275.91	40.09	276.00	7,244.00	14.07	-133.86	134.60	10.00	10.00	0.00	0.00
Sharon Springs Shale										
7,300.00	42.49	276.00	7,262.10	15.73	-149.67	150.50	10.00	10.00	0.00	0.00
7,347.87	47.28	276.00	7,296.00	19.26	-183.26	184.27	10.00	10.00	0.00	0.00
Niobrara Fm.										
7,400.00	52.49	276.00	7,329.58	23.43	-222.90	224.12	10.00	10.00	0.00	0.00
7,478.58	60.35	276.00	7,373.00	30.27	-287.95	289.54	10.00	10.00	0.00	0.00
Niobrara B										
7,500.00	62.49	276.00	7,383.25	32.23	-306.66	308.35	10.00	10.00	0.00	0.00
7,538.83	66.38	276.00	7,400.00	35.89	-341.49	343.38	10.00	10.00	0.00	0.00
Niobrara C										
7,600.00	72.49	276.00	7,421.47	41.88	-398.42	400.62	10.00	10.00	0.00	0.00
7,700.00	82.49	276.00	7,443.10	52.07	-495.39	498.12	10.00	10.00	0.00	0.00
7,771.59	89.65	276.00	7,448.00	59.53	-566.38	569.50	10.00	10.00	0.00	0.00
End Build 7771.59 ft - 7" Casing Pt.										
7,800.00	89.65	276.00	7,448.17	62.50	-594.63	597.91	0.00	0.00	0.00	0.00
7,900.00	89.65	276.00	7,448.77	72.95	-694.08	697.91	0.00	0.00	0.00	0.00
8,000.00	89.65	276.00	7,449.38	83.40	-793.53	797.90	0.00	0.00	0.00	0.00
8,100.00	89.65	276.00	7,449.98	93.86	-892.98	897.90	0.00	0.00	0.00	0.00
8,200.00	89.65	276.00	7,450.58	104.31	-992.43	997.90	0.00	0.00	0.00	0.00
8,300.00	89.65	276.00	7,451.19	114.76	-1,091.88	1,097.90	0.00	0.00	0.00	0.00
8,400.00	89.65	276.00	7,451.79	125.21	-1,191.33	1,197.90	0.00	0.00	0.00	0.00
8,500.00	89.65	276.00	7,452.40	135.67	-1,290.78	1,297.89	0.00	0.00	0.00	0.00
8,600.00	89.65	276.00	7,453.00	146.12	-1,390.23	1,397.89	0.00	0.00	0.00	0.00
8,700.00	89.65	276.00	7,453.60	156.57	-1,489.69	1,497.89	0.00	0.00	0.00	0.00
8,800.00	89.65	276.00	7,454.21	167.03	-1,589.14	1,597.89	0.00	0.00	0.00	0.00
8,900.00	89.65	276.00	7,454.81	177.48	-1,688.59	1,697.89	0.00	0.00	0.00	0.00
9,000.00	89.65	276.00	7,455.41	187.93	-1,788.04	1,797.89	0.00	0.00	0.00	0.00
9,100.00	89.65	276.00	7,456.02	198.38	-1,887.49	1,897.88	0.00	0.00	0.00	0.00
9,200.00	89.65	276.00	7,456.62	208.84	-1,986.94	1,997.88	0.00	0.00	0.00	0.00
9,300.00	89.65	276.00	7,457.23	219.29	-2,086.39	2,097.88	0.00	0.00	0.00	0.00
9,400.00	89.65	276.00	7,457.83	229.74	-2,185.84	2,197.88	0.00	0.00	0.00	0.00
9,500.00	89.65	276.00	7,458.43	240.19	-2,285.29	2,297.88	0.00	0.00	0.00	0.00
9,600.00	89.65	276.00	7,459.04	250.65	-2,384.74	2,397.87	0.00	0.00	0.00	0.00
9,700.00	89.65	276.00	7,459.64	261.10	-2,484.19	2,497.87	0.00	0.00	0.00	0.00
9,800.00	89.65	276.00	7,460.24	271.55	-2,583.64	2,597.87	0.00	0.00	0.00	0.00
9,900.00	89.65	276.00	7,460.85	282.00	-2,683.09	2,697.87	0.00	0.00	0.00	0.00

Plan Report for Youngberg 10-11-1H - Plan C Rev 0

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
10,000.00	89.65	276.00	7,461.45	292.46	-2,782.54	2,797.87	0.00	0.00	0.00	0.00
10,100.00	89.65	276.00	7,462.06	302.91	-2,881.99	2,897.87	0.00	0.00	0.00	0.00
10,200.00	89.65	276.00	7,462.66	313.36	-2,981.44	2,997.86	0.00	0.00	0.00	0.00
10,300.00	89.65	276.00	7,463.26	323.82	-3,080.89	3,097.86	0.00	0.00	0.00	0.00
10,400.00	89.65	276.00	7,463.87	334.27	-3,180.34	3,197.86	0.00	0.00	0.00	0.00
10,500.00	89.65	276.00	7,464.47	344.72	-3,279.79	3,297.86	0.00	0.00	0.00	0.00
10,600.00	89.65	276.00	7,465.07	355.17	-3,379.24	3,397.86	0.00	0.00	0.00	0.00
10,700.00	89.65	276.00	7,465.68	365.63	-3,478.69	3,497.85	0.00	0.00	0.00	0.00
10,800.00	89.65	276.00	7,466.28	376.08	-3,578.14	3,597.85	0.00	0.00	0.00	0.00
10,900.00	89.65	276.00	7,466.89	386.53	-3,677.59	3,697.85	0.00	0.00	0.00	0.00
11,000.00	89.65	276.00	7,467.49	396.98	-3,777.04	3,797.85	0.00	0.00	0.00	0.00
11,100.00	89.65	276.00	7,468.09	407.44	-3,876.49	3,897.85	0.00	0.00	0.00	0.00
11,200.00	89.65	276.00	7,468.70	417.89	-3,975.94	3,997.85	0.00	0.00	0.00	0.00
11,300.00	89.65	276.00	7,469.30	428.34	-4,075.40	4,097.84	0.00	0.00	0.00	0.00
11,400.00	89.65	276.00	7,469.91	438.79	-4,174.85	4,197.84	0.00	0.00	0.00	0.00
11,500.00	89.65	276.00	7,470.51	449.25	-4,274.30	4,297.84	0.00	0.00	0.00	0.00
Hold Inc 89.65°, Azi 276.00°										
11,581.34	89.65	276.00	7,471.00	457.75	-4,355.19	4,379.18	0.00	0.00	0.00	0.00
Niobrara D										
11,600.00	89.65	276.00	7,471.11	459.70	-4,373.75	4,397.84	0.00	0.00	0.00	0.00
11,700.00	89.65	276.00	7,471.72	470.15	-4,473.20	4,497.84	0.00	0.00	0.00	0.00
11,800.00	89.65	276.00	7,472.32	480.61	-4,572.65	4,597.83	0.00	0.00	0.00	0.00
11,900.00	89.65	276.00	7,472.92	491.06	-4,672.10	4,697.83	0.00	0.00	0.00	0.00
12,000.00	89.65	276.00	7,473.53	501.51	-4,771.55	4,797.83	0.00	0.00	0.00	0.00
12,100.00	89.65	276.00	7,474.13	511.96	-4,871.00	4,897.83	0.00	0.00	0.00	0.00
12,200.00	89.65	276.00	7,474.74	522.42	-4,970.45	4,997.83	0.00	0.00	0.00	0.00
12,300.00	89.65	276.00	7,475.34	532.87	-5,069.90	5,097.83	0.00	0.00	0.00	0.00
12,400.00	89.65	276.00	7,475.94	543.32	-5,169.35	5,197.82	0.00	0.00	0.00	0.00
12,500.00	89.65	276.00	7,476.55	553.77	-5,268.80	5,297.82	0.00	0.00	0.00	0.00
12,600.00	89.65	276.00	7,477.15	564.23	-5,368.25	5,397.82	0.00	0.00	0.00	0.00
12,700.00	89.65	276.00	7,477.75	574.68	-5,467.70	5,497.82	0.00	0.00	0.00	0.00
12,800.00	89.65	276.00	7,478.36	585.13	-5,567.15	5,597.82	0.00	0.00	0.00	0.00
12,900.00	89.65	276.00	7,478.96	595.58	-5,666.60	5,697.81	0.00	0.00	0.00	0.00
13,000.00	89.65	276.00	7,479.57	606.04	-5,766.05	5,797.81	0.00	0.00	0.00	0.00
13,100.00	89.65	276.00	7,480.17	616.49	-5,865.50	5,897.81	0.00	0.00	0.00	0.00
13,200.00	89.65	276.00	7,480.77	626.94	-5,964.95	5,997.81	0.00	0.00	0.00	0.00
13,300.00	89.65	276.00	7,481.38	637.40	-6,064.40	6,097.81	0.00	0.00	0.00	0.00
13,400.00	89.65	276.00	7,481.98	647.85	-6,163.85	6,197.81	0.00	0.00	0.00	0.00
13,500.00	89.65	276.00	7,482.58	658.30	-6,263.30	6,297.80	0.00	0.00	0.00	0.00
13,600.00	89.65	276.00	7,483.19	668.75	-6,362.75	6,397.80	0.00	0.00	0.00	0.00
13,700.00	89.65	276.00	7,483.79	679.21	-6,462.20	6,497.80	0.00	0.00	0.00	0.00
13,800.00	89.65	276.00	7,484.40	689.66	-6,561.65	6,597.80	0.00	0.00	0.00	0.00
13,900.00	89.65	276.00	7,485.00	700.11	-6,661.10	6,697.80	0.00	0.00	0.00	0.00
14,000.00	89.65	276.00	7,485.60	710.56	-6,760.56	6,797.79	0.00	0.00	0.00	0.00
14,100.00	89.65	276.00	7,486.21	721.02	-6,860.01	6,897.79	0.00	0.00	0.00	0.00
14,200.00	89.65	276.00	7,486.81	731.47	-6,959.46	6,997.79	0.00	0.00	0.00	0.00
14,300.00	89.65	276.00	7,487.41	741.92	-7,058.91	7,097.79	0.00	0.00	0.00	0.00
14,400.00	89.65	276.00	7,488.02	752.37	-7,158.36	7,197.79	0.00	0.00	0.00	0.00
14,500.00	89.65	276.00	7,488.62	762.83	-7,257.81	7,297.79	0.00	0.00	0.00	0.00
14,600.00	89.65	276.00	7,489.23	773.28	-7,357.26	7,397.78	0.00	0.00	0.00	0.00
14,700.00	89.65	276.00	7,489.83	783.73	-7,456.71	7,497.78	0.00	0.00	0.00	0.00
14,800.00	89.65	276.00	7,490.43	794.19	-7,556.16	7,597.78	0.00	0.00	0.00	0.00
14,900.00	89.65	276.00	7,491.04	804.64	-7,655.61	7,697.78	0.00	0.00	0.00	0.00
15,000.00	89.65	276.00	7,491.64	815.09	-7,755.06	7,797.78	0.00	0.00	0.00	0.00
15,100.00	89.65	276.00	7,492.25	825.54	-7,854.51	7,897.77	0.00	0.00	0.00	0.00
15,200.00	89.65	276.00	7,492.85	836.00	-7,953.96	7,997.77	0.00	0.00	0.00	0.00
15,300.00	89.65	276.00	7,493.45	846.45	-8,053.41	8,097.77	0.00	0.00	0.00	0.00
15,400.00	89.65	276.00	7,494.06	856.90	-8,152.86	8,197.77	0.00	0.00	0.00	0.00
15,500.00	89.65	276.00	7,494.66	867.35	-8,252.31	8,297.77	0.00	0.00	0.00	0.00

Plan Report for Youngberg 10-11-1H - Plan C Rev 0

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
15,600.00	89.65	276.00	7,495.26	877.81	-8,351.76	8,397.77	0.00	0.00	0.00	0.00
15,700.00	89.65	276.00	7,495.87	888.26	-8,451.21	8,497.76	0.00	0.00	0.00	0.00
15,800.00	89.65	276.00	7,496.47	898.71	-8,550.66	8,597.76	0.00	0.00	0.00	0.00
15,900.00	89.65	276.00	7,497.08	909.16	-8,650.11	8,697.76	0.00	0.00	0.00	0.00
16,000.00	89.65	276.00	7,497.68	919.62	-8,749.56	8,797.76	0.00	0.00	0.00	0.00
16,100.00	89.65	276.00	7,498.28	930.07	-8,849.01	8,897.76	0.00	0.00	0.00	0.00
16,200.00	89.65	276.00	7,498.89	940.52	-8,948.46	8,997.75	0.00	0.00	0.00	0.00
16,300.00	89.65	276.00	7,499.49	950.98	-9,047.91	9,097.75	0.00	0.00	0.00	0.00
16,400.00	89.65	276.00	7,500.09	961.43	-9,147.36	9,197.75	0.00	0.00	0.00	0.00
16,500.00	89.65	276.00	7,500.70	971.88	-9,246.81	9,297.75	0.00	0.00	0.00	0.00
16,550.00	89.65	276.00	7,501.00	977.11	-9,296.54	9,347.75	0.00	0.00	0.00	0.00
Total Depth 16550.00 ft - Youngberg 10-11-1H Plan C Rev 0 BHL Tgt										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
6,875.05	6,875.05	0.00	0.00	Kick Off Point 6875.05 ft
7,200.00	7,182.86	9.38	-89.21	Build Rate 10.00 °/100 ft
7,771.59	7,448.00	59.53	-566.38	End Build 7771.59 ft
11,500.00	7,470.51	449.25	-4,274.30	Hold Inc 89.65°, Azi 276.00°
16,550.00	7,501.00	977.11	-9,296.54	Total Depth 16550.00 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	+E/-W (ft)	Start TVD (ft)
Target	Youngberg 10-11-1H Plan C Rev 0 BHL Tgt	276.00	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	16,550.00	Plan C Rev 0	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,771.59	7,448.00	7" Casing Pt.	7	8-3/4

Plan Report for Youngberg 10-11-1H - Plan C Rev 0

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,597.00	1,597.00	Fox Hills Aquifer			
1,742.00	1,742.00	Pierre Shale			
7,275.91	7,244.00	Sharon Springs Shale			
7,347.87	7,296.00	Niobrara Fm.			
7,478.58	7,373.00	Niobrara B			
7,538.83	7,400.00	Niobrara C			
11,581.34	7,471.00	Niobrara D			

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Sec. 10711-T4S-R64W SB	0.00	0.00	0.00	Polygon
Peterson Heirs #1-11_500 ft SB	0.00	-540.55	-4,431.33	Circle
Frank Cavanaugh #1_500 ft SB	0.00	-455.82	-8,254.94	Circle
Peterson Heirs #2_500 ft SB	0.00	781.73	-4,402.97	Circle
Kissler Dan #2-10_500 ft SB	0.00	-300.16	-9,647.77	Circle
Kissler Dan #1-10_500 ft SB	0.00	-486.80	-6,986.41	Circle
Youngberg 10-11-1H Plan C Rev 0 BHL Tgt	7,501.00	977.11	-9,296.54	Point
Sec. 10711-T4S-R64W SL	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 11-T4S-R64W - Youngberg 10-11-1H - Plan C

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
 Vertical Depths are relative to RKB 24 ft @ 5697.00ft (H&P 280). Northing and Easting are relative to Youngberg 10-11-1H
 Coordinate System is US State Plane 1983, Colorado Central Zone using datum North American Datum 1983, ellipsoid GRS 1980
 Projection method is Lambert Conformal Conic (2 parallel)
 Central Meridian is -105.50°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:39° 45' 0.000 N°
 False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99999290
 Grid Coordinates of Well: 1,686,122.86 ft N, 3,278,652.93 ft E
 Geographical Coordinates of Well: 39° 42' 46.94" N, 104° 30' 34.19" W
 Grid Convergence at Surface is: 0.62°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,550.00ft
 the Bottom Hole Displacement is 9,347.75ft in the Direction of 276.00° (True).
 Magnetic Convergence at surface is: -7.80° (30 June 2013, , BGGM2013)

