

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 28-T1N-R67W

D&C Farms 34N-33HZ

Plan A 0

Plan: Plan A 0 - PERMIT

## Sperry Drilling Services

### Proposal Report

20 June, 2013

Well Coordinates: 1,249,319.07 N, 3,168,144.48 E (40° 00' 58.34" N, 104° 53' 58.80" W)

Ground Level: 5,008.00 ft

Local Coordinate Origin: Centered on Well D&C Farms 34N-33HZ

Viewing Datum: RKB=17 @ 5025.00ft (Drilling Rig)

TVDs to System: N

North Reference: True

Unit System: API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
 Site: Sec. 28-T1N-R67W  
 Well: D&C Farms 34N-33HZ  
 Wellbore: Plan A 0  
 Design: Plan A 0 - PERMIT



### SECTION DETAILS

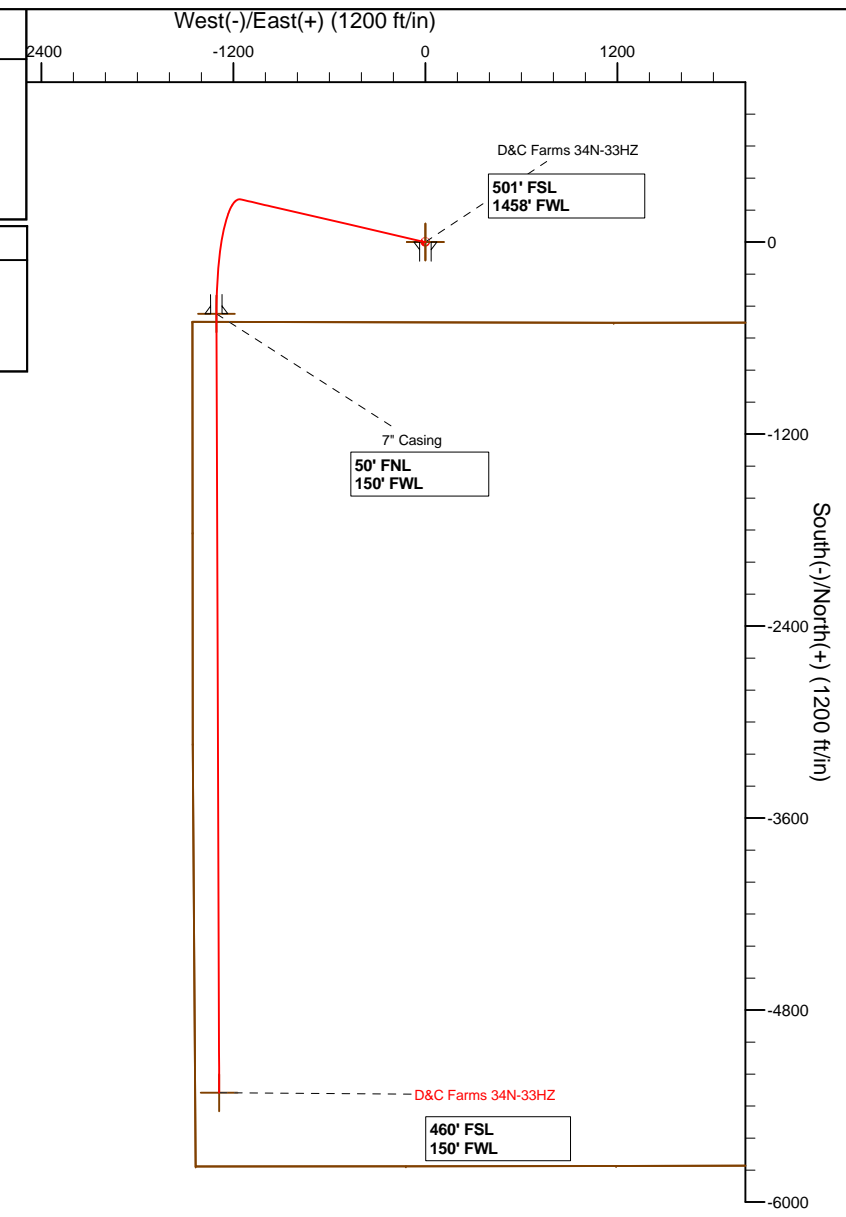
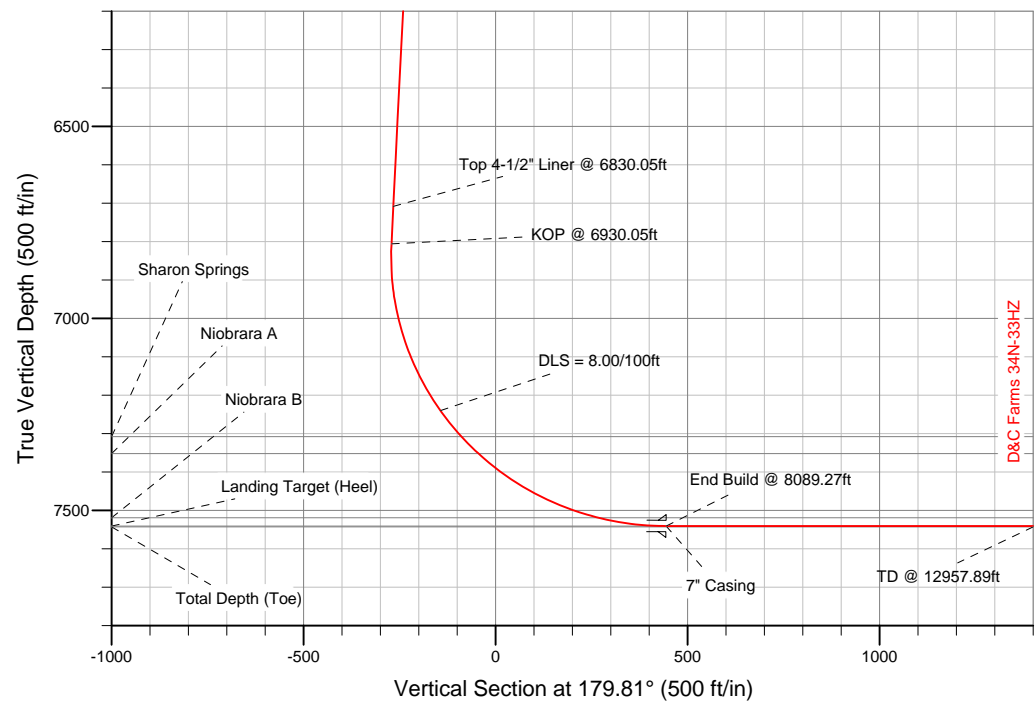
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
3	1607.54	12.15	283.03	1603.00	14.47	-62.53	2.00	283.03	-14.68	
4	6930.05	12.15	283.03	6806.26	267.10	-1153.99	0.00	0.00	-270.92	
5	8089.27	89.98	179.81	7541.00	-448.50	-1305.50	8.00	-102.94	444.17	D&C Farms 34N_CP
6	12957.89	89.98	179.81	7543.00	-5317.09	-1289.00	0.00	0.00	5312.79	D&C Farms 34N_BHL

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
D&C Farms 34N_Sec	0.00	0.00	0.00	40.016205	-104.899666	Polygon
D&C Farms 34N_SHL	0.00	0.00	0.00	40.016205	-104.899666	Point
D&C Farms 34N_CP	7541.00	-448.50	-1305.50	40.014974	-104.904327	Point
D&C Farms 34N_BHL	7543.00	-5317.09	-1289.00	40.001609	-104.904267	Point

MD TVD

6830.05 6708.51 Top 4-1/2" Liner @ 6830.05ft  
 6930.05 6806.26 KOP @ 6930.05ft



WELL DETAILS: D&C Farms 34N-33HZ	
Ground Level:	5008.00
RKB=17 @ 5025.00ft (Drilling Rig)	
Plan: Plan A 0 - PERMIT (D&C Farms 34N-33HZ/Plan A 0)	
Created By: Fred Hartmann Date: 06/20/2013	

**Plan Report for D&C Farms 34N-33HZ - Plan A 0 - PERMIT**

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
795.00	0.00	0.00	795.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8" Casing</b>										
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
<b>Begin Nudge @ 1000.00ft</b>										
1,100.00	2.00	283.03	1,099.98	0.39	-1.70	-0.40	2.00	2.00	0.00	283.03
1,200.00	4.00	283.03	1,199.84	1.57	-6.80	-1.60	2.00	2.00	0.00	0.00
1,300.00	6.00	283.03	1,299.45	3.54	-15.29	-3.59	2.00	2.00	0.00	0.00
1,400.00	8.00	283.03	1,398.70	6.29	-27.16	-6.38	2.00	2.00	0.00	0.00
1,500.00	10.00	283.03	1,497.47	9.81	-42.40	-9.95	2.00	2.00	0.00	0.00
1,600.00	12.00	283.03	1,595.62	14.12	-60.99	-14.32	2.00	2.00	0.00	0.00
1,607.54	12.15	283.03	1,603.00	14.47	-62.53	-14.68	2.00	2.00	0.00	0.00
<b>End Nudge @ 1607.54ft</b>										
1,700.00	12.15	283.03	1,693.38	18.86	-81.49	-19.13	0.00	0.00	0.00	0.00
1,800.00	12.15	283.03	1,791.14	23.61	-101.99	-23.95	0.00	0.00	0.00	0.00
1,900.00	12.15	283.03	1,888.90	28.35	-122.50	-28.76	0.00	0.00	0.00	0.00
2,000.00	12.15	283.03	1,986.66	33.10	-143.01	-33.57	0.00	0.00	0.00	0.00
2,100.00	12.15	283.03	2,084.42	37.85	-163.51	-38.39	0.00	0.00	0.00	0.00
2,200.00	12.15	283.03	2,182.18	42.59	-184.02	-43.20	0.00	0.00	0.00	0.00
2,300.00	12.15	283.03	2,279.94	47.34	-204.53	-48.02	0.00	0.00	0.00	0.00
2,400.00	12.15	283.03	2,377.70	52.08	-225.03	-52.83	0.00	0.00	0.00	0.00
2,500.00	12.15	283.03	2,475.46	56.83	-245.54	-57.65	0.00	0.00	0.00	0.00
2,600.00	12.15	283.03	2,573.22	61.58	-266.05	-62.46	0.00	0.00	0.00	0.00
2,700.00	12.15	283.03	2,670.98	66.32	-286.55	-67.27	0.00	0.00	0.00	0.00
2,800.00	12.15	283.03	2,768.74	71.07	-307.06	-72.09	0.00	0.00	0.00	0.00
2,900.00	12.15	283.03	2,866.50	75.82	-327.57	-76.90	0.00	0.00	0.00	0.00
3,000.00	12.15	283.03	2,964.26	80.56	-348.07	-81.72	0.00	0.00	0.00	0.00
3,100.00	12.15	283.03	3,062.02	85.31	-368.58	-86.53	0.00	0.00	0.00	0.00
3,200.00	12.15	283.03	3,159.78	90.06	-389.09	-91.35	0.00	0.00	0.00	0.00
3,300.00	12.15	283.03	3,257.54	94.80	-409.59	-96.16	0.00	0.00	0.00	0.00
3,400.00	12.15	283.03	3,355.30	99.55	-430.10	-100.97	0.00	0.00	0.00	0.00
3,500.00	12.15	283.03	3,453.06	104.29	-450.60	-105.79	0.00	0.00	0.00	0.00
3,600.00	12.15	283.03	3,550.82	109.04	-471.11	-110.60	0.00	0.00	0.00	0.00
3,700.00	12.15	283.03	3,648.58	113.79	-491.62	-115.42	0.00	0.00	0.00	0.00
3,800.00	12.15	283.03	3,746.34	118.53	-512.12	-120.23	0.00	0.00	0.00	0.00
3,900.00	12.15	283.03	3,844.10	123.28	-532.63	-125.05	0.00	0.00	0.00	0.00
4,000.00	12.15	283.03	3,941.86	128.03	-553.14	-129.86	0.00	0.00	0.00	0.00
4,100.00	12.15	283.03	4,039.62	132.77	-573.64	-134.67	0.00	0.00	0.00	0.00
4,200.00	12.15	283.03	4,137.38	137.52	-594.15	-139.49	0.00	0.00	0.00	0.00
4,300.00	12.15	283.03	4,235.14	142.27	-614.66	-144.30	0.00	0.00	0.00	0.00
4,400.00	12.15	283.03	4,332.90	147.01	-635.16	-149.12	0.00	0.00	0.00	0.00
4,500.00	12.15	283.03	4,430.66	151.76	-655.67	-153.93	0.00	0.00	0.00	0.00
4,600.00	12.15	283.03	4,528.42	156.50	-676.18	-158.75	0.00	0.00	0.00	0.00
4,700.00	12.15	283.03	4,626.18	161.25	-696.68	-163.56	0.00	0.00	0.00	0.00
4,800.00	12.15	283.03	4,723.93	166.00	-717.19	-168.37	0.00	0.00	0.00	0.00
4,900.00	12.15	283.03	4,821.69	170.74	-737.70	-173.19	0.00	0.00	0.00	0.00
4,916.68	12.15	283.03	4,838.00	171.53	-741.12	-173.99	0.00	0.00	0.00	0.00
<b>Sussex</b>										
5,000.00	12.15	283.03	4,919.45	175.49	-758.20	-178.00	0.00	0.00	0.00	0.00

**Plan Report for D&C Farms 34N-33HZ - Plan A 0 - PERMIT**

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 (°)
5,100.00	12.15	283.03	5,017.21	180.24	-778.71	-182.82	0.00	0.00	0.00	0.00
5,200.00	12.15	283.03	5,114.97	184.98	-799.22	-187.63	0.00	0.00	0.00	0.00
5,300.00	12.15	283.03	5,212.73	189.73	-819.72	-192.45	0.00	0.00	0.00	0.00
5,400.00	12.15	283.03	5,310.49	194.47	-840.23	-197.26	0.00	0.00	0.00	0.00
5,416.89	12.15	283.03	5,327.00	195.28	-843.69	-198.07	0.00	0.00	0.00	0.00
<b>Shannon</b>										
5,500.00	12.15	283.03	5,408.25	199.22	-860.74	-202.07	0.00	0.00	0.00	0.00
5,600.00	12.15	283.03	5,506.01	203.97	-881.24	-206.89	0.00	0.00	0.00	0.00
5,700.00	12.15	283.03	5,603.77	208.71	-901.75	-211.70	0.00	0.00	0.00	0.00
5,800.00	12.15	283.03	5,701.53	213.46	-922.26	-216.52	0.00	0.00	0.00	0.00
5,900.00	12.15	283.03	5,799.29	218.21	-942.76	-221.33	0.00	0.00	0.00	0.00
6,000.00	12.15	283.03	5,897.05	222.95	-963.27	-226.15	0.00	0.00	0.00	0.00
6,100.00	12.15	283.03	5,994.81	227.70	-983.77	-230.96	0.00	0.00	0.00	0.00
6,200.00	12.15	283.03	6,092.57	232.45	-1,004.28	-235.77	0.00	0.00	0.00	0.00
6,300.00	12.15	283.03	6,190.33	237.19	-1,024.79	-240.59	0.00	0.00	0.00	0.00
6,400.00	12.15	283.03	6,288.09	241.94	-1,045.29	-245.40	0.00	0.00	0.00	0.00
6,500.00	12.15	283.03	6,385.85	246.68	-1,065.80	-250.22	0.00	0.00	0.00	0.00
6,600.00	12.15	283.03	6,483.61	251.43	-1,086.31	-255.03	0.00	0.00	0.00	0.00
6,700.00	12.15	283.03	6,581.37	256.18	-1,106.81	-259.85	0.00	0.00	0.00	0.00
6,800.00	12.15	283.03	6,679.13	260.92	-1,127.32	-264.66	0.00	0.00	0.00	0.00
6,830.05	12.15	283.03	6,708.51	262.35	-1,133.48	-266.11	0.00	0.00	0.00	0.00
<b>Top 4-1/2" Liner @ 6830.05ft</b>										
6,900.00	12.15	283.03	6,776.89	265.67	-1,147.83	-269.47	0.00	0.00	0.00	0.00
6,930.05	12.15	283.03	6,806.26	267.10	-1,153.99	-270.92	0.00	0.00	0.00	0.00
<b>KOP @ 6930.05ft</b>										
7,000.00	12.17	256.23	6,874.70	267.00	-1,168.33	-270.87	8.00	0.02	-38.31	-102.94
7,100.00	15.99	226.79	6,971.80	255.04	-1,188.64	-258.98	8.00	3.83	-29.44	-76.72
7,200.00	22.13	210.82	7,066.33	229.39	-1,208.37	-233.39	8.00	6.14	-15.96	-48.11
7,300.00	29.15	201.87	7,156.46	190.55	-1,227.12	-194.62	8.00	7.02	-8.95	-32.99
7,400.00	36.55	196.22	7,240.43	139.27	-1,244.54	-143.40	8.00	7.40	-5.65	-24.91
<b>DLS = 8.00/100ft</b>										
7,488.09	43.22	192.69	7,308.00	84.59	-1,258.52	-88.76	8.00	7.58	-4.02	-20.15
<b>Sharon Springs</b>										
7,500.00	44.13	192.28	7,316.61	76.56	-1,260.29	-80.74	8.00	7.64	-3.44	-17.43
7,551.04	48.05	190.66	7,352.00	40.53	-1,267.59	-44.74	8.00	7.67	-3.17	-17.13
<b>Niobrara A</b>										
7,600.00	51.82	189.29	7,383.51	3.63	-1,274.06	-7.86	8.00	7.71	-2.81	-16.01
7,700.00	59.57	186.87	7,439.84	-78.09	-1,285.58	73.83	8.00	7.75	-2.41	-15.13
7,800.00	67.36	184.82	7,484.48	-167.02	-1,294.63	162.73	8.00	7.79	-2.06	-13.76
7,900.00	75.16	182.98	7,516.59	-261.42	-1,301.03	257.11	8.00	7.81	-1.83	-12.84
7,909.66	75.92	182.81	7,519.00	-270.76	-1,301.51	266.45	8.00	7.82	-1.75	-12.25
<b>Niobrara B</b>										
8,000.00	82.99	181.28	7,535.53	-359.46	-1,304.66	355.14	8.00	7.82	-1.70	-12.21
8,089.27	89.98	179.81	7,541.00	-448.50	-1,305.50	444.17	8.00	7.83	-1.65	-11.93
<b>End Build @ 8089.27ft - Landing Target (Heel) - 7" Casing - D&amp;C Farms 34N_CP</b>										
8,100.00	89.98	179.81	7,541.00	-459.23	-1,305.46	454.90	0.00	0.00	0.00	-11.84
8,200.00	89.98	179.81	7,541.05	-559.23	-1,305.12	554.90	0.00	0.00	0.00	0.00
8,300.00	89.98	179.81	7,541.09	-659.23	-1,304.79	654.90	0.00	0.00	0.00	0.00
8,400.00	89.98	179.81	7,541.13	-759.23	-1,304.45	754.90	0.00	0.00	0.00	0.00
8,500.00	89.98	179.81	7,541.17	-859.23	-1,304.11	854.90	0.00	0.00	0.00	0.00
8,600.00	89.98	179.81	7,541.21	-959.23	-1,303.77	954.90	0.00	0.00	0.00	0.00
8,700.00	89.98	179.81	7,541.25	-1,059.23	-1,303.43	1,054.90	0.00	0.00	0.00	0.00
8,800.00	89.98	179.81	7,541.29	-1,159.23	-1,303.09	1,154.90	0.00	0.00	0.00	0.00
8,900.00	89.98	179.81	7,541.33	-1,259.23	-1,302.75	1,254.90	0.00	0.00	0.00	0.00
9,000.00	89.98	179.81	7,541.37	-1,359.23	-1,302.41	1,354.90	0.00	0.00	0.00	0.00
9,100.00	89.98	179.81	7,541.42	-1,459.23	-1,302.07	1,454.90	0.00	0.00	0.00	0.00
9,200.00	89.98	179.81	7,541.46	-1,559.23	-1,301.74	1,554.90	0.00	0.00	0.00	0.00
9,300.00	89.98	179.81	7,541.50	-1,659.23	-1,301.40	1,654.90	0.00	0.00	0.00	0.00
9,400.00	89.98	179.81	7,541.54	-1,759.23	-1,301.06	1,754.90	0.00	0.00	0.00	0.00

**Plan Report for D&C Farms 34N-33HZ - Plan A 0 - PERMIT**

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 (°)
9,500.00	89.98	179.81	7,541.58	-1,859.23	-1,300.72	1,854.90	0.00	0.00	0.00	0.00
9,600.00	89.98	179.81	7,541.62	-1,959.23	-1,300.38	1,954.90	0.00	0.00	0.00	0.00
9,700.00	89.98	179.81	7,541.66	-2,059.22	-1,300.04	2,054.90	0.00	0.00	0.00	0.00
9,800.00	89.98	179.81	7,541.70	-2,159.22	-1,299.70	2,154.90	0.00	0.00	0.00	0.00
9,900.00	89.98	179.81	7,541.74	-2,259.22	-1,299.36	2,254.90	0.00	0.00	0.00	0.00
10,000.00	89.98	179.81	7,541.78	-2,359.22	-1,299.02	2,354.90	0.00	0.00	0.00	0.00
10,100.00	89.98	179.81	7,541.83	-2,459.22	-1,298.69	2,454.90	0.00	0.00	0.00	0.00
10,200.00	89.98	179.81	7,541.87	-2,559.22	-1,298.35	2,554.90	0.00	0.00	0.00	0.00
10,300.00	89.98	179.81	7,541.91	-2,659.22	-1,298.01	2,654.90	0.00	0.00	0.00	0.00
10,400.00	89.98	179.81	7,541.95	-2,759.22	-1,297.67	2,754.90	0.00	0.00	0.00	0.00
10,500.00	89.98	179.81	7,541.99	-2,859.22	-1,297.33	2,854.90	0.00	0.00	0.00	0.00
10,600.00	89.98	179.81	7,542.03	-2,959.22	-1,296.99	2,954.90	0.00	0.00	0.00	0.00
10,700.00	89.98	179.81	7,542.07	-3,059.22	-1,296.65	3,054.90	0.00	0.00	0.00	0.00
10,800.00	89.98	179.81	7,542.11	-3,159.22	-1,296.31	3,154.90	0.00	0.00	0.00	0.00
10,900.00	89.98	179.81	7,542.15	-3,259.22	-1,295.97	3,254.90	0.00	0.00	0.00	0.00
11,000.00	89.98	179.81	7,542.20	-3,359.22	-1,295.64	3,354.90	0.00	0.00	0.00	0.00
11,100.00	89.98	179.81	7,542.24	-3,459.22	-1,295.30	3,454.90	0.00	0.00	0.00	0.00
11,200.00	89.98	179.81	7,542.28	-3,559.22	-1,294.96	3,554.90	0.00	0.00	0.00	0.00
11,300.00	89.98	179.81	7,542.32	-3,659.22	-1,294.62	3,654.90	0.00	0.00	0.00	0.00
11,400.00	89.98	179.81	7,542.36	-3,759.22	-1,294.28	3,754.90	0.00	0.00	0.00	0.00
11,500.00	89.98	179.81	7,542.40	-3,859.21	-1,293.94	3,854.90	0.00	0.00	0.00	0.00
11,600.00	89.98	179.81	7,542.44	-3,959.21	-1,293.60	3,954.90	0.00	0.00	0.00	0.00
11,700.00	89.98	179.81	7,542.48	-4,059.21	-1,293.26	4,054.90	0.00	0.00	0.00	0.00
11,800.00	89.98	179.81	7,542.52	-4,159.21	-1,292.93	4,154.90	0.00	0.00	0.00	0.00
11,900.00	89.98	179.81	7,542.57	-4,259.21	-1,292.59	4,254.90	0.00	0.00	0.00	0.00
12,000.00	89.98	179.81	7,542.61	-4,359.21	-1,292.25	4,354.90	0.00	0.00	0.00	0.00
12,100.00	89.98	179.81	7,542.65	-4,459.21	-1,291.91	4,454.90	0.00	0.00	0.00	0.00
12,200.00	89.98	179.81	7,542.69	-4,559.21	-1,291.57	4,554.90	0.00	0.00	0.00	0.00
12,300.00	89.98	179.81	7,542.73	-4,659.21	-1,291.23	4,654.90	0.00	0.00	0.00	0.00
12,400.00	89.98	179.81	7,542.77	-4,759.21	-1,290.89	4,754.90	0.00	0.00	0.00	0.00
12,500.00	89.98	179.81	7,542.81	-4,859.21	-1,290.55	4,854.90	0.00	0.00	0.00	0.00
12,600.00	89.98	179.81	7,542.85	-4,959.21	-1,290.21	4,954.90	0.00	0.00	0.00	0.00
12,700.00	89.98	179.81	7,542.89	-5,059.21	-1,289.88	5,054.90	0.00	0.00	0.00	0.00
12,800.00	89.98	179.81	7,542.94	-5,159.21	-1,289.54	5,154.90	0.00	0.00	0.00	0.00
12,900.00	89.98	179.81	7,542.98	-5,259.21	-1,289.20	5,254.90	0.00	0.00	0.00	0.00
12,957.89	89.98	179.81	7,543.00	-5,317.09	-1,289.00	5,312.79	0.00	0.00	0.00	0.00
<b>Total Depth (Toe) - D&amp;C Farms 34N_BHL</b>										

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.00	1,000.00	0.00	0.00	Begin Nudge @ 1000.00ft
1,607.54	1,603.00	14.47	-62.53	End Nudge @ 1607.54ft
6,830.05	6,708.51	262.35	-1,133.48	Top 4-1/2" Liner @ 6830.05ft
6,930.05	6,806.26	267.10	-1,153.99	KOP @ 6930.05ft
7,400.00	7,240.43	139.27	-1,244.54	DLS = 8.00/100ft
8,089.27	7,541.00	-448.50	-1,305.50	End Build @ 8089.27ft
12,957.89	7,543.00	-5,317.10	-1,289.00	TD @ 12957.89ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	179.81	Slot	0.00	0.00	0.00

## Plan Report for D&C Farms 34N-33HZ - Plan A 0 - PERMIT

### Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,957.89	Plan A 0 - PERMIT	MWD

### Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
795.00	795.00	9 5/8" Casing	9-5/8	13-1/2
8,089.27	7,541.00	7" Casing	7	8-3/4

### Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,916.68	4,838.00	Sussex			
5,416.89	5,327.00	Shannon			
7,488.09	7,308.00	Sharon Springs			
7,551.04	7,352.00	Niobrara A			
7,909.66	7,519.00	Niobrara B			
8,089.27	7,541.00	Landing Target (Heel)			
12,957.89	7,543.00	Total Depth (Toe)			

### *Targets associated with this wellbore*

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
D&C Farms 34N_SHL	0.00	0.00	0.00	Point
D&C Farms 34N_CP	7,541.00	-448.50	-1,305.50	Point
D&C Farms 34N_Sec	0.00	0.00	0.00	Polygon
D&C Farms 34N_BHL	7,543.00	-5,317.09	-1,289.00	Point

## North Reference Sheet for Sec. 28-T1N-R67W - D&C Farms 34N-33HZ - Plan A 0

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

Vertical Depths are relative to RKB=17 @ 5025.00ft (Drilling Rig). Northing and Easting are relative to D&C Farms 34N-33HZ

Coordinate System is US State Plane 1983, Colorado Northern 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:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99996518

Grid Coordinates of Well: 1,249,319.07 ft N, 3,168,144.48 ft E

Geographical Coordinates of Well: 40° 00' 58.34" N, 104° 53' 58.80" W

Grid Convergence at Surface is: 0.39°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,957.89ft  
the Bottom Hole Displacement is 5,471.11ft in the Direction of 193.63° (True).

Magnetic Convergence at surface is: -8.27° (20 June 2013, , BGGM2013)

