

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 34-T2N-R65W

Sparboe 7C-3HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

Sperry Drilling Services

Proposal Report

03 August, 2012

Well Coordinates: 1,280,971.47 N, 3,238,883.55 E (40° 06' 05.40" N, 104° 38' 45.70" W)

Ground Level: 4,977.00 ft

Local Coordinate Origin:

Centered on Well Sparboe 7C-3HZ

Viewing Datum:

RKB=17ft @ 4994.00ft (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. 34-T2N-R65W
Well: Sparboe 7C-3HZ
Wellbore: Plan A Rev 0
Design: Plan A Rev 0 Permit

Anadarko Petroleum Corp.

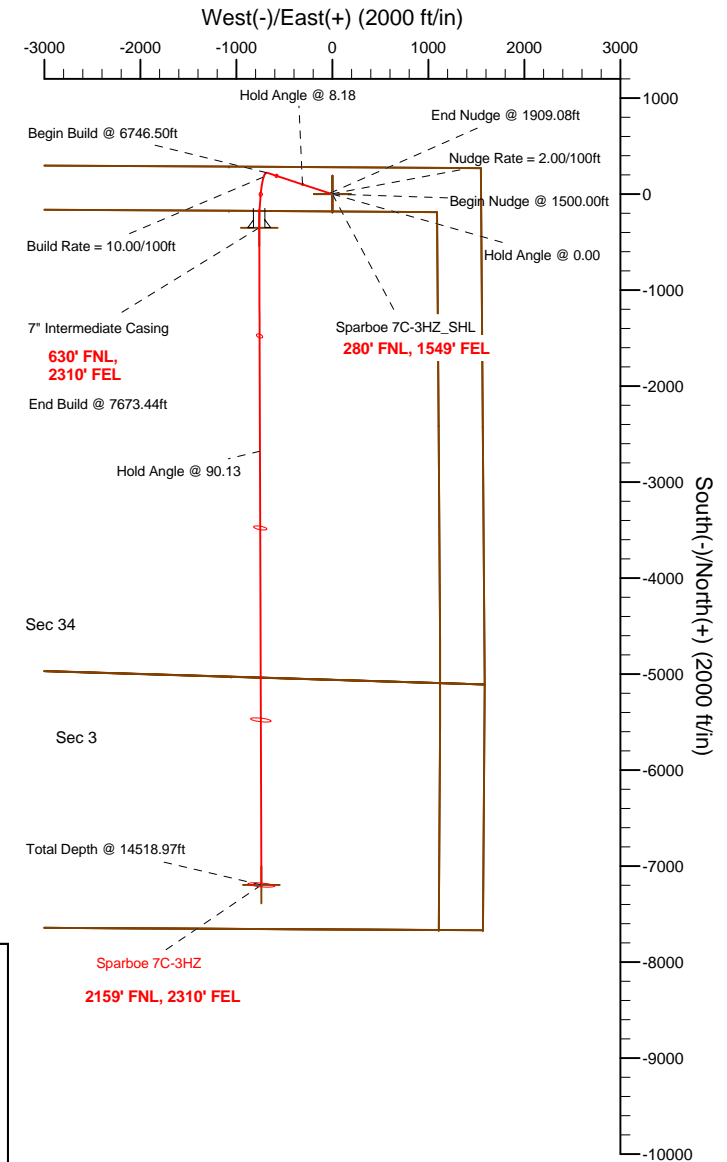
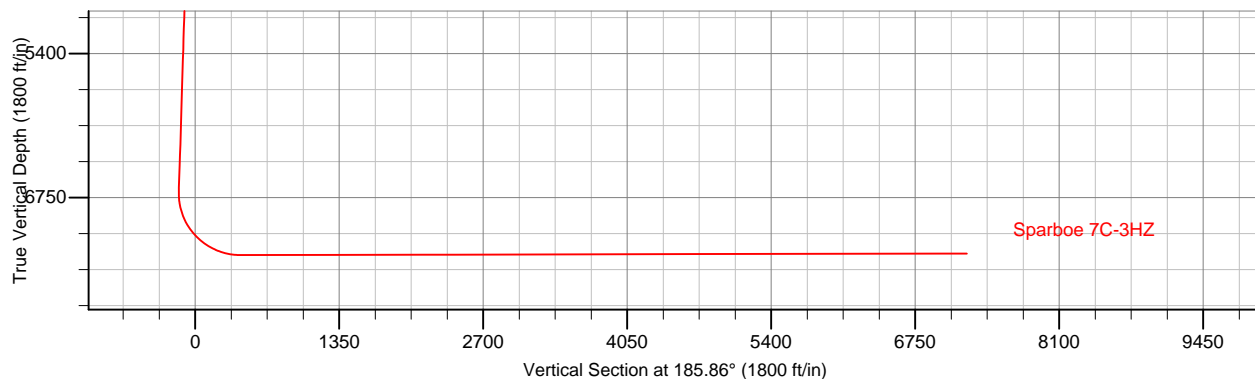
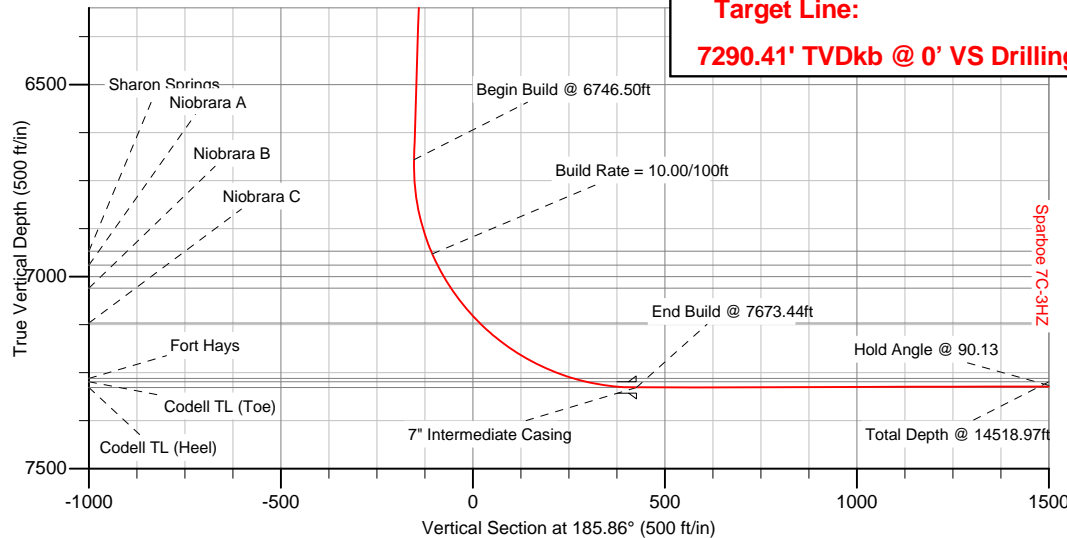
HALLIBURTON
Sperry Drilling

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	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	
3	1909.08	8.18	288.18	1907.69	9.10	-27.70	2.00	288.18	-6.22	
4	6746.50	8.18	288.18	6695.87	223.89	-681.75	0.00	0.00	-153.09	
5	7673.44	90.13	179.81	7289.00	-350.00	-761.00	10.00	-108.17	425.89	Sparboe 7C-3HZ_Casing Point
6	14518.97	90.13	179.81	7274.00	-7195.48	-738.75	0.00	0.00	7233.31	Sparboe 7C-3HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Sparboe 7C-3HZ_Sec 34/3 Line	0.00	0.00	0.00	40.101501	-104.646028	Polygon
Sparboe 7C-3HZ_Section Lines	0.00	0.00	0.00	40.101501	-104.646028	Polygon
Sparboe 7C-3HZ_Setback Lines	0.00	0.00	0.00	40.101501	-104.646028	Polygon
Sparboe 7C-3HZ_SHL	0.00	0.00	0.00	40.101501	-104.646028	Point
Sparboe 7C-3HZ_BHL	7274.00	-7195.48	-738.75	40.081749	-104.648668	Point
Sparboe 7C-3HZ_Casing Point	7289.00	-350.00	-761.00	40.100540	-104.648748	Point



WELL DETAILS: Sparboe 7C-3HZ

Ground Level: 4977.00 RKB=17ft @ 4994.00ft (Drilling Rig)

Plan: Plan A Rev 0 Permit (Sparboe 7C-3HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 08/03/2012
Reviewed: _____ Date: _____

Plan Report for Sparboe 7C-3HZ - Plan A Rev 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
Sparboe 7C-3HZ_SHL - Sparboe 7C-3HZ_Sec 34/3 Line - Sparboe 7C-3HZ_Section Lines - Sparboe 7C-3HZ_Setback Lines										
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
747.00	0.00	0.00	747.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills										
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hold Angle @ 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
Begin Nudge @ 1500.00ft										
1,600.00	2.00	288.18	1,599.98	0.54	-1.66	-0.37	2.00	2.00	0.00	288.18
1,700.00	4.00	288.18	1,699.84	2.18	-6.63	-1.49	2.00	2.00	0.00	0.00
Nudge Rate = 2.00/100ft										
1,800.00	6.00	288.18	1,799.45	4.90	-14.91	-3.35	2.00	2.00	0.00	0.00
1,900.00	8.00	288.18	1,898.70	8.70	-26.49	-5.95	2.00	2.00	0.00	0.00
1,909.08	8.18	288.18	1,907.69	9.10	-27.70	-6.22	2.00	2.00	0.00	0.00
End Nudge @ 1909.08ft										
2,000.00	8.18	288.18	1,997.69	13.13	-40.00	-8.98	0.00	0.00	0.00	0.00
2,100.00	8.18	288.18	2,096.67	17.57	-53.52	-12.02	0.00	0.00	0.00	0.00
2,200.00	8.18	288.18	2,195.65	22.01	-67.04	-15.05	0.00	0.00	0.00	0.00
2,300.00	8.18	288.18	2,294.63	26.45	-80.56	-18.09	0.00	0.00	0.00	0.00
2,400.00	8.18	288.18	2,393.61	30.89	-94.08	-21.13	0.00	0.00	0.00	0.00
2,500.00	8.18	288.18	2,492.60	35.34	-107.60	-24.16	0.00	0.00	0.00	0.00
2,600.00	8.18	288.18	2,591.58	39.78	-121.12	-27.20	0.00	0.00	0.00	0.00
2,700.00	8.18	288.18	2,690.56	44.22	-134.64	-30.23	0.00	0.00	0.00	0.00
2,800.00	8.18	288.18	2,789.54	48.66	-148.16	-33.27	0.00	0.00	0.00	0.00
2,900.00	8.18	288.18	2,888.53	53.10	-161.68	-36.31	0.00	0.00	0.00	0.00
3,000.00	8.18	288.18	2,987.51	57.54	-175.20	-39.34	0.00	0.00	0.00	0.00
3,100.00	8.18	288.18	3,086.49	61.98	-188.72	-42.38	0.00	0.00	0.00	0.00
3,200.00	8.18	288.18	3,185.47	66.42	-202.24	-45.41	0.00	0.00	0.00	0.00
3,300.00	8.18	288.18	3,284.45	70.86	-215.76	-48.45	0.00	0.00	0.00	0.00
3,400.00	8.18	288.18	3,383.44	75.30	-229.28	-51.49	0.00	0.00	0.00	0.00
3,500.00	8.18	288.18	3,482.42	79.74	-242.81	-54.52	0.00	0.00	0.00	0.00
3,600.00	8.18	288.18	3,581.40	84.18	-256.33	-57.56	0.00	0.00	0.00	0.00
3,700.00	8.18	288.18	3,680.38	88.62	-269.85	-60.59	0.00	0.00	0.00	0.00
3,800.00	8.18	288.18	3,779.37	93.06	-283.37	-63.63	0.00	0.00	0.00	0.00
3,900.00	8.18	288.18	3,878.35	97.50	-296.89	-66.67	0.00	0.00	0.00	0.00
4,000.00	8.18	288.18	3,977.33	101.94	-310.41	-69.70	0.00	0.00	0.00	0.00
Hold Angle @ 8.18										
4,100.00	8.18	288.18	4,076.31	106.38	-323.93	-72.74	0.00	0.00	0.00	0.00
4,200.00	8.18	288.18	4,175.29	110.82	-337.45	-75.77	0.00	0.00	0.00	0.00
4,300.00	8.18	288.18	4,274.28	115.26	-350.97	-78.81	0.00	0.00	0.00	0.00
4,400.00	8.18	288.18	4,373.26	119.70	-364.49	-81.85	0.00	0.00	0.00	0.00
4,500.00	8.18	288.18	4,472.24	124.14	-378.01	-84.88	0.00	0.00	0.00	0.00
4,600.00	8.18	288.18	4,571.22	128.58	-391.53	-87.92	0.00	0.00	0.00	0.00
4,700.00	8.18	288.18	4,670.21	133.02	-405.05	-90.95	0.00	0.00	0.00	0.00

Plan Report for Sparboe 7C-3HZ - Plan A Rev 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 (°)
4,800.00	8.18	288.18	4,769.19	137.46	-418.57	-93.99	0.00	0.00	0.00	0.00
4,900.00	8.18	288.18	4,868.17	141.90	-432.09	-97.03	0.00	0.00	0.00	0.00
5,000.00	8.18	288.18	4,967.15	146.34	-445.62	-100.06	0.00	0.00	0.00	0.00
5,026.11	8.18	288.18	4,993.00	147.50	-449.15	-100.86	0.00	0.00	0.00	0.00
Sussex										
5,100.00	8.18	288.18	5,066.13	150.78	-459.14	-103.10	0.00	0.00	0.00	0.00
5,200.00	8.18	288.18	5,165.12	155.22	-472.66	-106.13	0.00	0.00	0.00	0.00
5,300.00	8.18	288.18	5,264.10	159.66	-486.18	-109.17	0.00	0.00	0.00	0.00
5,400.00	8.18	288.18	5,363.08	164.10	-499.70	-112.21	0.00	0.00	0.00	0.00
5,500.00	8.18	288.18	5,462.06	168.54	-513.22	-115.24	0.00	0.00	0.00	0.00
5,600.00	8.18	288.18	5,561.05	172.98	-526.74	-118.28	0.00	0.00	0.00	0.00
5,700.00	8.18	288.18	5,660.03	177.42	-540.26	-121.31	0.00	0.00	0.00	0.00
5,800.00	8.18	288.18	5,759.01	181.86	-553.78	-124.35	0.00	0.00	0.00	0.00
5,900.00	8.18	288.18	5,857.99	186.30	-567.30	-127.39	0.00	0.00	0.00	0.00
6,000.00	8.18	288.18	5,956.97	190.74	-580.82	-130.42	0.00	0.00	0.00	0.00
6,100.00	8.18	288.18	6,055.96	195.18	-594.34	-133.46	0.00	0.00	0.00	0.00
6,200.00	8.18	288.18	6,154.94	199.62	-607.86	-136.49	0.00	0.00	0.00	0.00
6,300.00	8.18	288.18	6,253.92	204.06	-621.38	-139.53	0.00	0.00	0.00	0.00
6,400.00	8.18	288.18	6,352.90	208.50	-634.90	-142.57	0.00	0.00	0.00	0.00
6,500.00	8.18	288.18	6,451.88	212.94	-648.43	-145.60	0.00	0.00	0.00	0.00
6,600.00	8.18	288.18	6,550.87	217.38	-661.95	-148.64	0.00	0.00	0.00	0.00
6,700.00	8.18	288.18	6,649.85	221.82	-675.47	-151.68	0.00	0.00	0.00	0.00
6,746.50	8.18	288.18	6,695.88	223.89	-681.75	-153.09	0.00	0.00	0.00	0.00
Begin Build @ 6746.50ft										
6,800.00	8.25	250.06	6,748.87	223.76	-688.98	-152.23	10.00	0.13	-71.25	-108.17
6,900.00	14.93	210.62	6,846.91	210.20	-702.32	-137.37	10.00	6.67	-39.43	-70.42
6,992.21	23.27	198.33	6,934.00	182.63	-714.13	-108.74	10.00	9.05	-13.33	-31.67
Sharon Springs										
7,000.00	24.00	197.68	6,941.14	179.66	-715.09	-105.69	10.00	9.41	-8.41	-20.01
Build Rate = 10.00/100ft										
7,031.99	27.04	195.34	6,970.00	166.45	-718.99	-92.14	10.00	9.49	-7.31	-19.41
Niobrara A										
7,100.00	33.59	191.69	7,028.69	133.07	-726.90	-58.14	10.00	9.63	-5.37	-17.30
7,101.58	33.74	191.62	7,030.00	132.22	-727.08	-57.27	10.00	9.70	-4.40	-14.15
Niobrara B										
7,200.00	43.35	188.14	7,106.90	71.85	-737.39	3.83	10.00	9.76	-3.53	-14.09
7,219.71	45.28	187.60	7,121.00	58.21	-739.28	17.60	10.00	9.81	-2.77	-11.36
Niobrara C										
7,300.00	53.18	185.69	7,173.39	-2.14	-746.25	78.34	10.00	9.84	-2.37	-10.97
7,400.00	63.05	183.81	7,226.14	-86.66	-753.20	163.13	10.00	9.87	-1.89	-9.72
7,500.00	72.95	182.23	7,263.56	-179.13	-758.03	255.61	10.00	9.89	-1.58	-8.72
7,504.97	73.44	182.16	7,265.00	-183.89	-758.22	260.36	10.00	9.90	-1.48	-8.13
Fort Hays										
7,600.00	82.85	180.81	7,284.50	-276.75	-760.60	352.98	10.00	9.90	-1.42	-8.11
7,673.44	90.13	179.81	7,289.00	-350.00	-761.00	425.89	10.00	9.91	-1.36	-7.83
End Build @ 7673.44ft - Codell TL (Heel) - 7" Intermediate Casing - Sparboe 7C-3HZ Casing Point										
7,700.00	90.13	179.81	7,288.94	-376.56	-760.91	452.30	0.00	0.00	0.00	-7.77
7,800.00	90.13	179.81	7,288.72	-476.56	-760.59	551.75	0.00	0.00	0.00	0.00
7,900.00	90.13	179.81	7,288.50	-576.56	-760.26	651.19	0.00	0.00	0.00	0.00
8,000.00	90.13	179.81	7,288.28	-676.56	-759.94	750.63	0.00	0.00	0.00	0.00
8,100.00	90.13	179.81	7,288.07	-776.56	-759.61	850.08	0.00	0.00	0.00	0.00
8,200.00	90.13	179.81	7,287.85	-876.56	-759.29	949.52	0.00	0.00	0.00	0.00
8,300.00	90.13	179.81	7,287.63	-976.55	-758.96	1,048.96	0.00	0.00	0.00	0.00
8,400.00	90.13	179.81	7,287.41	-1,076.55	-758.64	1,148.41	0.00	0.00	0.00	0.00
8,500.00	90.13	179.81	7,287.19	-1,176.55	-758.31	1,247.85	0.00	0.00	0.00	0.00
8,600.00	90.13	179.81	7,286.97	-1,276.55	-757.99	1,347.29	0.00	0.00	0.00	0.00
8,700.00	90.13	179.81	7,286.75	-1,376.55	-757.66	1,446.73	0.00	0.00	0.00	0.00
8,800.00	90.13	179.81	7,286.53	-1,476.55	-757.34	1,546.18	0.00	0.00	0.00	0.00
8,900.00	90.13	179.81	7,286.31	-1,576.55	-757.01	1,645.62	0.00	0.00	0.00	0.00

Plan Report for Sparboe 7C-3HZ - Plan A Rev 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 (°)
9,000.00	90.13	179.81	7,286.09	-1,676.55	-756.69	1,745.06	0.00	0.00	0.00	0.00
9,100.00	90.13	179.81	7,285.87	-1,776.55	-756.36	1,844.51	0.00	0.00	0.00	0.00
9,200.00	90.13	179.81	7,285.65	-1,876.55	-756.04	1,943.95	0.00	0.00	0.00	0.00
9,300.00	90.13	179.81	7,285.44	-1,976.55	-755.71	2,043.39	0.00	0.00	0.00	0.00
9,400.00	90.13	179.81	7,285.22	-2,076.55	-755.39	2,142.84	0.00	0.00	0.00	0.00
9,500.00	90.13	179.81	7,285.00	-2,176.55	-755.06	2,242.28	0.00	0.00	0.00	0.00
9,600.00	90.13	179.81	7,284.78	-2,276.54	-754.74	2,341.72	0.00	0.00	0.00	0.00
9,700.00	90.13	179.81	7,284.56	-2,376.54	-754.41	2,441.17	0.00	0.00	0.00	0.00
9,800.00	90.13	179.81	7,284.34	-2,476.54	-754.09	2,540.61	0.00	0.00	0.00	0.00
9,900.00	90.13	179.81	7,284.12	-2,576.54	-753.76	2,640.05	0.00	0.00	0.00	0.00
10,000.00	90.13	179.81	7,283.90	-2,676.54	-753.44	2,739.50	0.00	0.00	0.00	0.00
Hold Angle @ 90.13										
10,100.00	90.13	179.81	7,283.68	-2,776.54	-753.11	2,838.94	0.00	0.00	0.00	0.00
10,200.00	90.13	179.81	7,283.46	-2,876.54	-752.79	2,938.38	0.00	0.00	0.00	0.00
10,300.00	90.13	179.81	7,283.24	-2,976.54	-752.46	3,037.82	0.00	0.00	0.00	0.00
10,400.00	90.13	179.81	7,283.03	-3,076.54	-752.14	3,137.27	0.00	0.00	0.00	0.00
10,500.00	90.13	179.81	7,282.81	-3,176.54	-751.81	3,236.71	0.00	0.00	0.00	0.00
10,600.00	90.13	179.81	7,282.59	-3,276.54	-751.49	3,336.15	0.00	0.00	0.00	0.00
10,700.00	90.13	179.81	7,282.37	-3,376.54	-751.16	3,435.60	0.00	0.00	0.00	0.00
10,800.00	90.13	179.81	7,282.15	-3,476.54	-750.84	3,535.04	0.00	0.00	0.00	0.00
10,900.00	90.13	179.81	7,281.93	-3,576.53	-750.51	3,634.48	0.00	0.00	0.00	0.00
11,000.00	90.13	179.81	7,281.71	-3,676.53	-750.19	3,733.93	0.00	0.00	0.00	0.00
11,100.00	90.13	179.81	7,281.49	-3,776.53	-749.86	3,833.37	0.00	0.00	0.00	0.00
11,200.00	90.13	179.81	7,281.27	-3,876.53	-749.54	3,932.81	0.00	0.00	0.00	0.00
11,300.00	90.13	179.81	7,281.05	-3,976.53	-749.21	4,032.26	0.00	0.00	0.00	0.00
11,400.00	90.13	179.81	7,280.83	-4,076.53	-748.89	4,131.70	0.00	0.00	0.00	0.00
11,500.00	90.13	179.81	7,280.62	-4,176.53	-748.56	4,231.14	0.00	0.00	0.00	0.00
11,600.00	90.13	179.81	7,280.40	-4,276.53	-748.24	4,330.59	0.00	0.00	0.00	0.00
11,700.00	90.13	179.81	7,280.18	-4,376.53	-747.91	4,430.03	0.00	0.00	0.00	0.00
11,800.00	90.13	179.81	7,279.96	-4,476.53	-747.59	4,529.47	0.00	0.00	0.00	0.00
11,900.00	90.13	179.81	7,279.74	-4,576.53	-747.26	4,628.91	0.00	0.00	0.00	0.00
12,000.00	90.13	179.81	7,279.52	-4,676.53	-746.94	4,728.36	0.00	0.00	0.00	0.00
12,100.00	90.13	179.81	7,279.30	-4,776.53	-746.61	4,827.80	0.00	0.00	0.00	0.00
12,200.00	90.13	179.81	7,279.08	-4,876.52	-746.29	4,927.24	0.00	0.00	0.00	0.00
12,300.00	90.13	179.81	7,278.86	-4,976.52	-745.96	5,026.69	0.00	0.00	0.00	0.00
12,400.00	90.13	179.81	7,278.64	-5,076.52	-745.64	5,126.13	0.00	0.00	0.00	0.00
12,500.00	90.13	179.81	7,278.42	-5,176.52	-745.31	5,225.57	0.00	0.00	0.00	0.00
12,600.00	90.13	179.81	7,278.20	-5,276.52	-744.99	5,325.02	0.00	0.00	0.00	0.00
12,700.00	90.13	179.81	7,277.99	-5,376.52	-744.66	5,424.46	0.00	0.00	0.00	0.00
12,800.00	90.13	179.81	7,277.77	-5,476.52	-744.34	5,523.90	0.00	0.00	0.00	0.00
12,900.00	90.13	179.81	7,277.55	-5,576.52	-744.01	5,623.35	0.00	0.00	0.00	0.00
13,000.00	90.13	179.81	7,277.33	-5,676.52	-743.69	5,722.79	0.00	0.00	0.00	0.00
13,100.00	90.13	179.81	7,277.11	-5,776.52	-743.36	5,822.23	0.00	0.00	0.00	0.00
13,200.00	90.13	179.81	7,276.89	-5,876.52	-743.04	5,921.68	0.00	0.00	0.00	0.00
13,300.00	90.13	179.81	7,276.67	-5,976.52	-742.71	6,021.12	0.00	0.00	0.00	0.00
13,400.00	90.13	179.81	7,276.45	-6,076.52	-742.39	6,120.56	0.00	0.00	0.00	0.00
13,500.00	90.13	179.81	7,276.23	-6,176.51	-742.06	6,220.00	0.00	0.00	0.00	0.00
13,600.00	90.13	179.81	7,276.01	-6,276.51	-741.74	6,319.45	0.00	0.00	0.00	0.00
13,700.00	90.13	179.81	7,275.79	-6,376.51	-741.41	6,418.89	0.00	0.00	0.00	0.00
13,800.00	90.13	179.81	7,275.58	-6,476.51	-741.09	6,518.33	0.00	0.00	0.00	0.00
13,900.00	90.13	179.81	7,275.36	-6,576.51	-740.76	6,617.78	0.00	0.00	0.00	0.00
14,000.00	90.13	179.81	7,275.14	-6,676.51	-740.44	6,717.22	0.00	0.00	0.00	0.00
14,100.00	90.13	179.81	7,274.92	-6,776.51	-740.11	6,816.66	0.00	0.00	0.00	0.00
14,200.00	90.13	179.81	7,274.70	-6,876.51	-739.79	6,916.11	0.00	0.00	0.00	0.00
14,300.00	90.13	179.81	7,274.48	-6,976.51	-739.46	7,015.55	0.00	0.00	0.00	0.00
14,400.00	90.13	179.81	7,274.26	-7,076.51	-739.14	7,114.99	0.00	0.00	0.00	0.00
14,500.00	90.13	179.81	7,274.04	-7,176.51	-738.81	7,214.44	0.00	0.00	0.00	0.00
14,518.97	90.13	179.81	7,274.00	-7,195.48	-738.75	7,233.30	0.00	0.00	0.00	0.00
Total Depth @ 14518.97ft - Codell TL (Toe) - Sparboe 7C-3HZ_BHL										

Plan Report for Sparboe 7C-3HZ - Plan A Rev 0 Permit**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
800.00	800.00	0.00	0.00	Hold Angle @ 0.00
1,500.00	1,500.00	0.00	0.00	Begin Nudge @ 1500.00ft
1,700.00	1,699.84	2.18	-6.63	Nudge Rate = 2.00/100ft
1,909.08	1,907.69	9.10	-27.70	End Nudge @ 1909.08ft
4,000.00	3,977.33	101.94	-310.41	Hold Angle @ 8.18
6,746.50	6,695.88	223.89	-681.75	Begin Build @ 6746.50ft
7,000.00	6,941.14	179.66	-715.09	Build Rate = 10.00/100ft
7,673.44	7,289.00	-350.00	-761.00	End Build @ 7673.44ft
10,000.00	7,283.90	-2,676.54	-753.44	Hold Angle @ 90.13
14,518.97	7,274.00	-7,195.48	-738.75	Total Depth @ 14518.97ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Sparboe 7C-3HZ_BHL	185.86	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	14,518.97	Plan A Rev 0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,673.44	7,289.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
747.00	747.00	Fox Hills		0.00	
5,026.11	4,993.00	Sussex		0.00	
6,992.21	6,934.00	Sharon Springs		0.00	
7,031.99	6,970.00	Niobrara A		0.00	
7,101.58	7,030.00	Niobrara B		0.00	
7,219.71	7,121.00	Niobrara C		0.00	
7,504.97	7,265.00	Fort Hays		0.00	
7,673.44	7,289.00	Codell TL (Heel)		0.00	
14,518.97	7,274.00	Codell TL (Toe)		0.00	

Plan Report for Sparboe 7C-3HZ - Plan A Rev 0 Permit

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Sparboe 7C-3HZ_Setback Lines	0.00	0.00	0.00	Polygon
Sparboe 7C-3HZ_Casing Point	7,289.00	-350.00	-761.00	Point
Sparboe 7C-3HZ_SHL	0.00	0.00	0.00	Point
Sparboe 7C-3HZ_BHL	7,274.00	-7,195.48	-738.75	Point
Sparboe 7C-3HZ_Sec 34/3 Line	0.00	0.00	0.00	Polygon
Sparboe 7C-3HZ_Section Lines	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 34-T2N-R65W - Sparboe 7C-3HZ - Plan A Rev 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=17ft @ 4994.00ft (Drilling Rig). Northing and Easting are relative to Sparboe 7C-3HZ

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: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99996022

Grid Coordinates of Well: 1,280,971.468714 ft N, 3,238,883.553081 ft E

Geographical Coordinates of Well: 40° 06' 05.40" N, 104° 38' 45.70" W

Grid Convergence at Surface is: 0.55°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,518.97ft
the Bottom Hole Displacement is 7,233.30ft in the Direction of 185.86° (True).

Magnetic Convergence at surface is: -8.06° (3 August 2012, , BGGM2011)

