

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 19-T1N-R67W

Jelts 15N-19HZ

Plan B Rev 0

Plan: Plan B Rev 0 Permit

## Sperry Drilling Services

## Proposal Report

06 December, 2012

Well Coordinates: 1,259,069.39 N, 3,159,405.72 E (40° 02' 35.26" N, 104° 55' 50.31" W)

Ground Level: 5,148.00 ft

Local Coordinate Origin:

Centered on Well Jelts 15N-19HZ

Viewing Datum:

RKB=17 @ 5165.00ft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
Site: Sec. 19-T1N-R67W  
Well: Jelts 15N-19HZ  
Wellbore: Plan B Rev 0  
Design: Plan B Rev 0 Permit

# Anadarko Petroleum Corp.

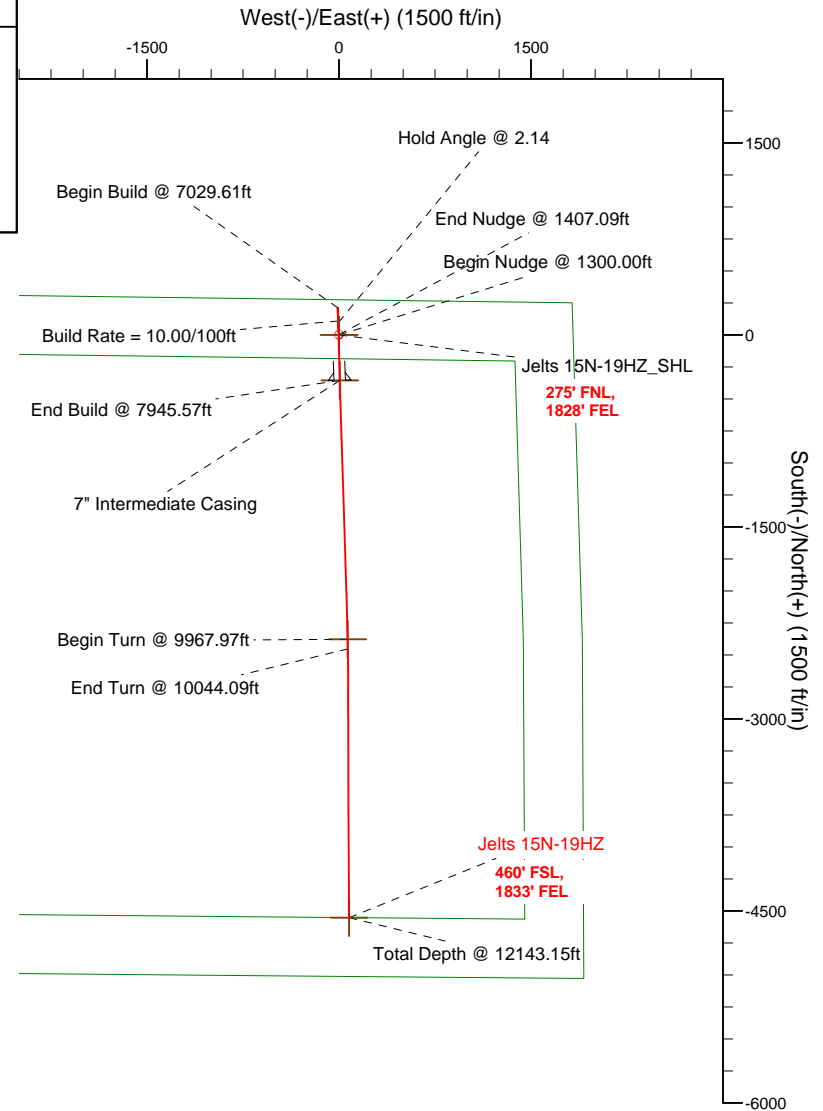
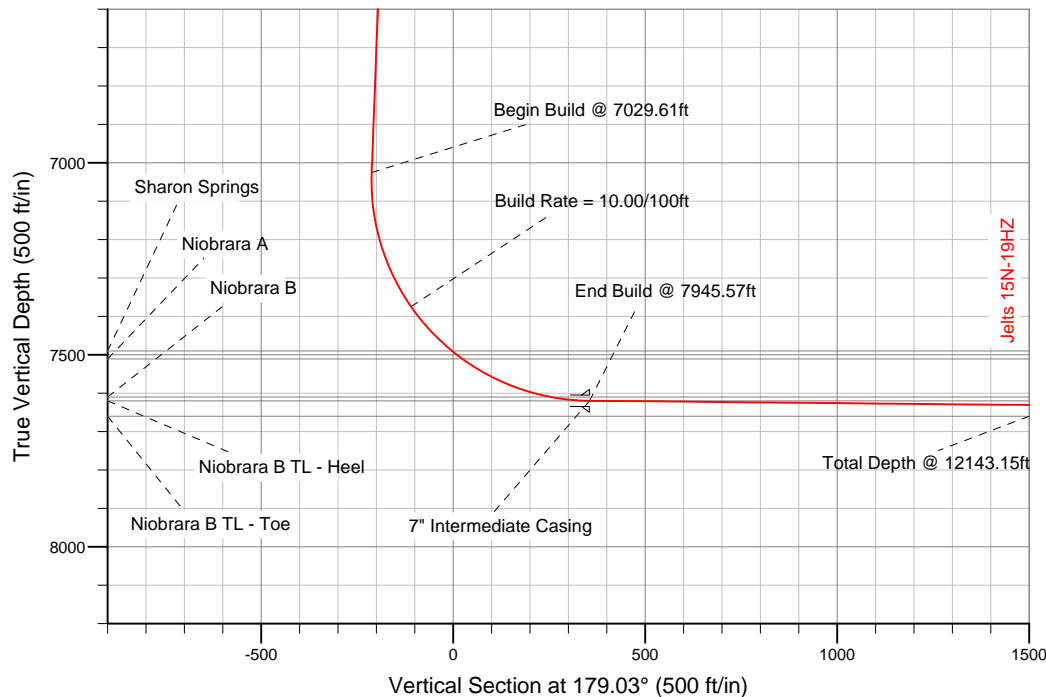
**HALLIBURTON**  
Sperry Drilling

## 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	1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00	
3	1407.09	2.14	357.08	1407.06	2.00	-0.10	2.00	357.08	-2.00	
4	7029.61	2.14	357.08	7025.66	211.85	-10.81	0.00	0.00	-212.00	
5	7945.57	89.45	178.26	7620.00	-355.00	6.00	10.00	-178.82	355.05	Jelts 15N-19HZ_CP
6	9967.97	89.45	178.26	7639.27	-2376.38	67.57	0.00	0.00	2377.18	Jelts 15N-19HZ_TP
7	10044.09	89.45	179.78	7640.00	-2452.48	68.87	2.00	90.01	2453.30	
8	12143.15	89.45	179.78	7660.00	-4551.42	77.01	0.00	0.00	4552.07	Jelts 15N-19HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Jelts 15N-19HZ_SHL	0.00	0.00	0.00	40.043129	-104.930642	Point
Jelts 15N-19HZ_CP	7620.00	-355.00	6.00	40.042154	-104.930621	Point
Jelts 15N-19HZ_TP	7639.27	-2376.38	67.57	40.036606	-104.930401	Point
Jelts 15N-19HZ_BHL	7660.00	-4551.42	77.01	40.030635	-104.930367	Point



## WELL DETAILS: Jelts 15N-19HZ

Ground Level: 5148.00 RKB=17 @ 5165.00ft (Drilling Rig)

Plan: Plan B Rev 0 Permit (Jelts 15N-19HZ/Plan B Rev 0)

Created By: Fred Hartmann Date: 12/03/2012  
Reviewed: Date:

**Plan Report for Jelts 15N-19HZ - Plan B 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
<b>Jelts 15N-19HZ_SHL</b>										
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
<b>Begin Nudge @ 1300.00ft</b>										
1,400.00	2.00	357.08	1,399.98	1.74	-0.09	-1.74	2.00	2.00	0.00	357.08
1,407.09	2.14	357.08	1,407.07	2.00	-0.10	-2.00	2.00	2.00	0.00	0.00
<b>End Nudge @ 1407.09ft</b>										
1,500.00	2.14	357.08	1,499.91	5.47	-0.28	-5.47	0.00	0.00	0.00	0.00
1,600.00	2.14	357.08	1,599.84	9.20	-0.47	-9.21	0.00	0.00	0.00	0.00
1,700.00	2.14	357.08	1,699.77	12.93	-0.66	-12.94	0.00	0.00	0.00	0.00
1,800.00	2.14	357.08	1,799.70	16.66	-0.85	-16.68	0.00	0.00	0.00	0.00
1,900.00	2.14	357.08	1,899.63	20.40	-1.04	-20.41	0.00	0.00	0.00	0.00
2,000.00	2.14	357.08	1,999.56	24.13	-1.23	-24.15	0.00	0.00	0.00	0.00
2,100.00	2.14	357.08	2,099.49	27.86	-1.42	-27.88	0.00	0.00	0.00	0.00
2,200.00	2.14	357.08	2,199.42	31.59	-1.61	-31.62	0.00	0.00	0.00	0.00
2,300.00	2.14	357.08	2,299.35	35.33	-1.80	-35.35	0.00	0.00	0.00	0.00
2,400.00	2.14	357.08	2,399.28	39.06	-1.99	-39.09	0.00	0.00	0.00	0.00
2,500.00	2.14	357.08	2,499.21	42.79	-2.18	-42.82	0.00	0.00	0.00	0.00
2,600.00	2.14	357.08	2,599.14	46.52	-2.37	-46.56	0.00	0.00	0.00	0.00
2,700.00	2.14	357.08	2,699.07	50.25	-2.56	-50.29	0.00	0.00	0.00	0.00
2,800.00	2.14	357.08	2,799.00	53.99	-2.76	-54.03	0.00	0.00	0.00	0.00
2,900.00	2.14	357.08	2,898.93	57.72	-2.95	-57.76	0.00	0.00	0.00	0.00
3,000.00	2.14	357.08	2,998.86	61.45	-3.14	-61.50	0.00	0.00	0.00	0.00
3,100.00	2.14	357.08	3,098.79	65.18	-3.33	-65.23	0.00	0.00	0.00	0.00
3,200.00	2.14	357.08	3,198.72	68.92	-3.52	-68.97	0.00	0.00	0.00	0.00
3,300.00	2.14	357.08	3,298.65	72.65	-3.71	-72.70	0.00	0.00	0.00	0.00
3,400.00	2.14	357.08	3,398.58	76.38	-3.90	-76.44	0.00	0.00	0.00	0.00
3,500.00	2.14	357.08	3,498.51	80.11	-4.09	-80.17	0.00	0.00	0.00	0.00
3,600.00	2.14	357.08	3,598.44	83.85	-4.28	-83.91	0.00	0.00	0.00	0.00
3,700.00	2.14	357.08	3,698.37	87.58	-4.47	-87.64	0.00	0.00	0.00	0.00
3,800.00	2.14	357.08	3,798.30	91.31	-4.66	-91.38	0.00	0.00	0.00	0.00
3,900.00	2.14	357.08	3,898.23	95.04	-4.85	-95.11	0.00	0.00	0.00	0.00
4,000.00	2.14	357.08	3,998.16	98.77	-5.04	-98.85	0.00	0.00	0.00	0.00
<b>Hold Angle @ 2.14</b>										
4,100.00	2.14	357.08	4,098.09	102.51	-5.23	-102.58	0.00	0.00	0.00	0.00
4,200.00	2.14	357.08	4,198.02	106.24	-5.42	-106.32	0.00	0.00	0.00	0.00
4,300.00	2.14	357.08	4,297.95	109.97	-5.61	-110.05	0.00	0.00	0.00	0.00
4,400.00	2.14	357.08	4,397.88	113.70	-5.80	-113.79	0.00	0.00	0.00	0.00
4,500.00	2.14	357.08	4,497.81	117.44	-5.99	-117.52	0.00	0.00	0.00	0.00
4,600.00	2.14	357.08	4,597.74	121.17	-6.18	-121.26	0.00	0.00	0.00	0.00
4,700.00	2.14	357.08	4,697.67	124.90	-6.37	-124.99	0.00	0.00	0.00	0.00
4,800.00	2.14	357.08	4,797.60	128.63	-6.57	-128.73	0.00	0.00	0.00	0.00
4,900.00	2.14	357.08	4,897.54	132.37	-6.76	-132.46	0.00	0.00	0.00	0.00
4,917.48	2.14	357.08	4,915.00	133.02	-6.79	-133.11	0.00	0.00	0.00	0.00
<b>Sussex</b>										
5,000.00	2.14	357.08	4,997.47	136.10	-6.95	-136.20	0.00	0.00	0.00	0.00

**Plan Report for Jelts 15N-19HZ - Plan B 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 (°)
5,100.00	2.14	357.08	5,097.40	139.83	-7.14	-139.93	0.00	0.00	0.00	0.00
5,200.00	2.14	357.08	5,197.33	143.56	-7.33	-143.67	0.00	0.00	0.00	0.00
5,300.00	2.14	357.08	5,297.26	147.29	-7.52	-147.40	0.00	0.00	0.00	0.00
5,400.00	2.14	357.08	5,397.19	151.03	-7.71	-151.14	0.00	0.00	0.00	0.00
5,500.00	2.14	357.08	5,497.12	154.76	-7.90	-154.87	0.00	0.00	0.00	0.00
5,600.00	2.14	357.08	5,597.05	158.49	-8.09	-158.61	0.00	0.00	0.00	0.00
5,700.00	2.14	357.08	5,696.98	162.22	-8.28	-162.34	0.00	0.00	0.00	0.00
5,800.00	2.14	357.08	5,796.91	165.96	-8.47	-166.08	0.00	0.00	0.00	0.00
5,900.00	2.14	357.08	5,896.84	169.69	-8.66	-169.81	0.00	0.00	0.00	0.00
6,000.00	2.14	357.08	5,996.77	173.42	-8.85	-173.55	0.00	0.00	0.00	0.00
6,100.00	2.14	357.08	6,096.70	177.15	-9.04	-177.28	0.00	0.00	0.00	0.00
6,200.00	2.14	357.08	6,196.63	180.89	-9.23	-181.02	0.00	0.00	0.00	0.00
6,300.00	2.14	357.08	6,296.56	184.62	-9.42	-184.75	0.00	0.00	0.00	0.00
6,400.00	2.14	357.08	6,396.49	188.35	-9.61	-188.49	0.00	0.00	0.00	0.00
6,500.00	2.14	357.08	6,496.42	192.08	-9.80	-192.22	0.00	0.00	0.00	0.00
6,600.00	2.14	357.08	6,596.35	195.81	-9.99	-195.96	0.00	0.00	0.00	0.00
6,700.00	2.14	357.08	6,696.28	199.55	-10.18	-199.69	0.00	0.00	0.00	0.00
6,800.00	2.14	357.08	6,796.21	203.28	-10.38	-203.43	0.00	0.00	0.00	0.00
6,900.00	2.14	357.08	6,896.14	207.01	-10.57	-207.16	0.00	0.00	0.00	0.00
7,000.00	2.14	357.08	6,996.07	210.74	-10.76	-210.90	0.00	0.00	0.00	0.00
7,029.61	2.14	357.08	7,025.66	211.85	-10.81	-212.00	0.00	0.00	0.00	0.00
<b>Begin Build @ 7029.61ft</b>										
7,100.00	4.90	178.77	7,095.98	210.16	-10.82	-210.31	10.00	3.92	-253.32	-178.82
7,200.00	14.90	178.42	7,194.37	193.00	-10.37	-193.14	10.00	10.00	-0.35	-0.52
7,300.00	24.90	178.35	7,288.28	159.02	-9.41	-159.16	10.00	10.00	-0.07	-0.17
7,400.00	34.90	178.32	7,374.86	109.26	-7.96	-109.38	10.00	10.00	-0.03	-0.10
<b>Build Rate = 10.00/100ft</b>										
7,500.00	44.90	178.30	7,451.48	45.23	-6.06	-45.32	10.00	10.00	-0.02	-0.08
7,557.32	50.63	178.29	7,490.00	2.82	-4.80	-2.90	10.00	10.00	-0.01	-0.06
<b>Sharon Springs</b>										
7,591.71	54.07	178.29	7,511.00	-24.38	-3.99	24.31	10.00	10.00	-0.01	-0.06
<b>Niobrara A</b>										
7,600.00	54.90	178.29	7,515.82	-31.13	-3.79	31.06	10.00	10.00	-0.01	-0.05
7,700.00	64.90	178.28	7,565.91	-117.50	-1.19	117.46	10.00	10.00	-0.01	-0.05
7,800.00	74.90	178.27	7,600.24	-211.24	1.64	211.24	10.00	10.00	-0.01	-0.05
7,843.68	79.27	178.26	7,610.00	-253.79	2.92	253.80	10.00	10.00	-0.01	-0.05
<b>Niobrara B</b>										
7,900.00	84.90	178.26	7,617.76	-309.52	4.62	309.56	10.00	10.00	-0.01	-0.04
7,945.57	89.45	178.26	7,620.00	-355.00	6.00	355.05	10.00	10.00	-0.01	-0.04
<b>End Build @ 7945.57ft - Niobrara B TL - Heel - 7" Intermediate Casing - Jelts 15N-19HZ_CP</b>										
8,000.00	89.45	178.26	7,620.52	-409.41	7.66	409.48	0.00	0.00	0.00	-0.04
8,100.00	89.45	178.26	7,621.47	-509.35	10.70	509.46	0.00	0.00	0.00	0.00
8,200.00	89.45	178.26	7,622.42	-609.30	13.75	609.45	0.00	0.00	0.00	0.00
8,300.00	89.45	178.26	7,623.38	-709.25	16.79	709.44	0.00	0.00	0.00	0.00
8,400.00	89.45	178.26	7,624.33	-809.20	19.83	809.42	0.00	0.00	0.00	0.00
8,500.00	89.45	178.26	7,625.28	-909.15	22.88	909.41	0.00	0.00	0.00	0.00
8,600.00	89.45	178.26	7,626.24	-1,009.10	25.92	1,009.39	0.00	0.00	0.00	0.00
8,700.00	89.45	178.26	7,627.19	-1,109.05	28.97	1,109.38	0.00	0.00	0.00	0.00
8,800.00	89.45	178.26	7,628.14	-1,209.00	32.01	1,209.37	0.00	0.00	0.00	0.00
8,900.00	89.45	178.26	7,629.09	-1,308.95	35.06	1,309.35	0.00	0.00	0.00	0.00
9,000.00	89.45	178.26	7,630.05	-1,408.90	38.10	1,409.34	0.00	0.00	0.00	0.00
9,100.00	89.45	178.26	7,631.00	-1,508.85	41.14	1,509.33	0.00	0.00	0.00	0.00
9,200.00	89.45	178.26	7,631.95	-1,608.79	44.19	1,609.31	0.00	0.00	0.00	0.00
9,300.00	89.45	178.26	7,632.91	-1,708.74	47.23	1,709.30	0.00	0.00	0.00	0.00
9,400.00	89.45	178.26	7,633.86	-1,808.69	50.28	1,809.28	0.00	0.00	0.00	0.00
9,500.00	89.45	178.26	7,634.81	-1,908.64	53.32	1,909.27	0.00	0.00	0.00	0.00
9,600.00	89.45	178.26	7,635.76	-2,008.59	56.37	2,009.26	0.00	0.00	0.00	0.00
9,700.00	89.45	178.26	7,636.72	-2,108.54	59.41	2,109.24	0.00	0.00	0.00	0.00
9,800.00	89.45	178.26	7,637.67	-2,208.49	62.45	2,209.23	0.00	0.00	0.00	0.00

**Plan Report for Jelts 15N-19HZ - Plan B 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 (°)
9,900.00	89.45	178.26	7,638.62	-2,308.44	65.50	2,309.22	0.00	0.00	0.00	0.00
9,967.97	89.45	178.26	7,639.27	-2,376.38	67.57	2,377.18	0.00	0.00	0.00	0.00
<b>Begin Turn @ 9967.97ft - Jelts 15N-19HZ_TP</b>										
10,000.00	89.45	178.90	7,639.58	-2,408.39	68.36	2,409.20	2.00	0.00	2.00	90.01
10,044.09	89.45	179.78	7,640.00	-2,452.48	68.87	2,453.29	2.00	0.00	2.00	90.01
<b>End Turn @ 10044.09ft</b>										
10,100.00	89.45	179.78	7,640.53	-2,508.38	69.09	2,509.19	0.00	0.00	0.00	90.00
10,200.00	89.45	179.78	7,641.48	-2,608.38	69.48	2,609.18	0.00	0.00	0.00	0.00
10,300.00	89.45	179.78	7,642.43	-2,708.37	69.87	2,709.17	0.00	0.00	0.00	0.00
10,400.00	89.45	179.78	7,643.39	-2,808.37	70.25	2,809.15	0.00	0.00	0.00	0.00
10,500.00	89.45	179.78	7,644.34	-2,908.36	70.64	2,909.14	0.00	0.00	0.00	0.00
10,600.00	89.45	179.78	7,645.29	-3,008.36	71.03	3,009.13	0.00	0.00	0.00	0.00
10,700.00	89.45	179.78	7,646.25	-3,108.35	71.42	3,109.12	0.00	0.00	0.00	0.00
10,800.00	89.45	179.78	7,647.20	-3,208.35	71.80	3,209.10	0.00	0.00	0.00	0.00
10,900.00	89.45	179.78	7,648.15	-3,308.34	72.19	3,309.09	0.00	0.00	0.00	0.00
11,000.00	89.45	179.78	7,649.11	-3,408.34	72.58	3,409.08	0.00	0.00	0.00	0.00
11,100.00	89.45	179.78	7,650.06	-3,508.33	72.97	3,509.06	0.00	0.00	0.00	0.00
11,200.00	89.45	179.78	7,651.01	-3,608.33	73.35	3,609.05	0.00	0.00	0.00	0.00
11,300.00	89.45	179.78	7,651.96	-3,708.32	73.74	3,709.04	0.00	0.00	0.00	0.00
11,400.00	89.45	179.78	7,652.92	-3,808.32	74.13	3,809.02	0.00	0.00	0.00	0.00
11,500.00	89.45	179.78	7,653.87	-3,908.31	74.52	3,909.01	0.00	0.00	0.00	0.00
11,600.00	89.45	179.78	7,654.82	-4,008.30	74.91	4,009.00	0.00	0.00	0.00	0.00
11,700.00	89.45	179.78	7,655.78	-4,108.30	75.29	4,108.99	0.00	0.00	0.00	0.00
11,800.00	89.45	179.78	7,656.73	-4,208.29	75.68	4,208.97	0.00	0.00	0.00	0.00
11,900.00	89.45	179.78	7,657.68	-4,308.29	76.07	4,308.96	0.00	0.00	0.00	0.00
12,000.00	89.45	179.78	7,658.64	-4,408.28	76.46	4,408.95	0.00	0.00	0.00	0.00
12,100.00	89.45	179.78	7,659.59	-4,508.28	76.84	4,508.93	0.00	0.00	0.00	0.00
12,143.15	89.45	179.78	7,660.00	-4,551.42	77.01	4,552.07	0.00	0.00	0.00	0.00
<b>Niobrara B TL - Toe - Jelts 15N-19HZ_BHL</b>										

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,300.00	1,300.00	0.00	0.00	Begin Nudge @ 1300.00ft
1,407.09	1,407.07	2.00	-0.10	End Nudge @ 1407.09ft
4,000.00	3,998.16	98.77	-5.04	Hold Angle @ 2.14
7,029.61	7,025.66	211.85	-10.81	Begin Build @ 7029.61ft
7,400.00	7,374.86	109.26	-7.96	Build Rate = 10.00/100ft
7,945.57	7,620.00	-355.00	6.00	End Build @ 7945.57ft
9,967.97	7,639.27	-2,376.37	67.57	Begin Turn @ 9967.97ft
10,044.09	7,640.00	-2,452.48	68.87	End Turn @ 10044.09ft
12,143.15	7,660.00	-4,551.43	77.01	Total Depth @ 12143.15ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Jelts 15N-19HZ_BHL	179.03	Slot	0.00	0.00	0.00

**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,143.15	Plan B Rev 0 Permit	MWD

**Plan Report for Jelts 15N-19HZ - Plan B Rev 0 Permit****Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,945.57	7,620.00	7" Intermediate Casing	7	8-3/4

**Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,917.48	4,915.00	Sussex		0.00	
7,557.32	7,490.00	Sharon Springs		0.00	
7,591.71	7,511.00	Niobrara A		0.00	
7,843.68	7,610.00	Niobrara B		0.00	
7,945.57	7,620.00	Niobrara B TL - Heel		0.00	
12,143.15	7,660.00	Niobrara B TL - Toe		0.00	

***Targets associated with this wellbore***

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Jelts 15N-19HZ_TP	7,639.27	-2,376.38	67.57	Point
Jelts 15N-19HZ_CP	7,620.00	-355.00	6.00	Point
Jelts 15N-19HZ_SHL	0.00	0.00	0.00	Point
Jelts 15N-19HZ_BHL	7,660.00	-4,551.42	77.01	Point

## North Reference Sheet for Sec. 19-T1N-R67W - Jelts 15N-19HZ - Plan B 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=17 @ 5165.00ft (Drilling Rig). Northing and Easting are relative to Jelts 15N-19HZ  
 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: 0.99996338

Grid Coordinates of Well: 1,259,069.39 ft N, 3,159,405.72 ft E  
 Geographical Coordinates of Well: 40° 02' 35.26" N, 104° 55' 50.31" W  
 Grid Convergence at Surface is: 0.37°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,143.15ft  
 the Bottom Hole Displacement is 4,552.07ft in the Direction of 179.03° (True).

Magnetic Convergence at surface is: -8.40° ( 6 December 2012, , BGGM2012)

