

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 8-T2N-R66W

Kunzman Federal 30N-5HZ

Plan D 0

Plan: Plan D 0-Permit

## Sperry Drilling Services

## Proposal Report

05 June, 2013

Well Coordinates: 1,301,807.10 N, 3,194,473.06 E (40° 09' 35.14" N, 104° 48' 15.11" W)

Ground Level: 4,858.00 ft

Local Coordinate Origin: Centered on Well Kunzman Federal 30N-5HZ

Viewing Datum: RKB @ 17' @ 4875.00ft (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. 8-T2N-R66W  
 Well: Kunzman Federal 30N-5HZ  
 Wellbore: Plan D 0  
 Design: Plan D 0-Permit



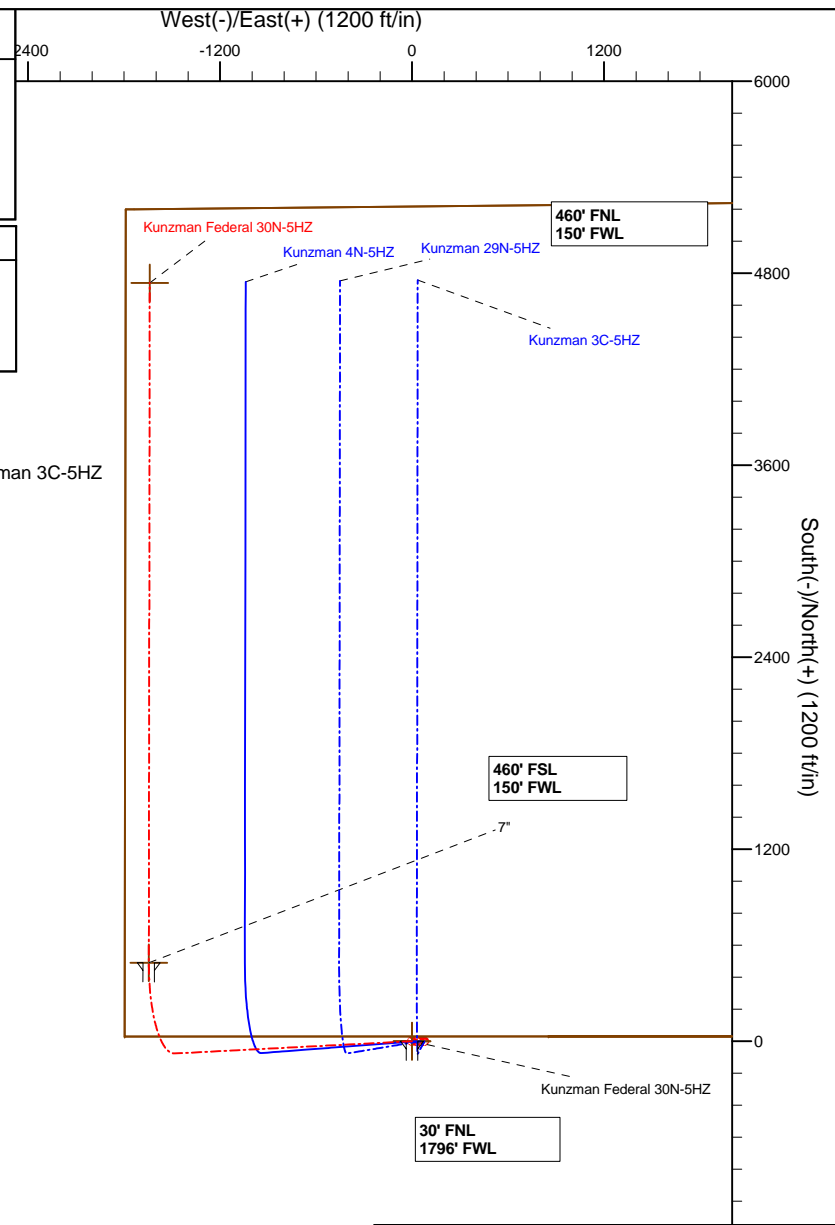
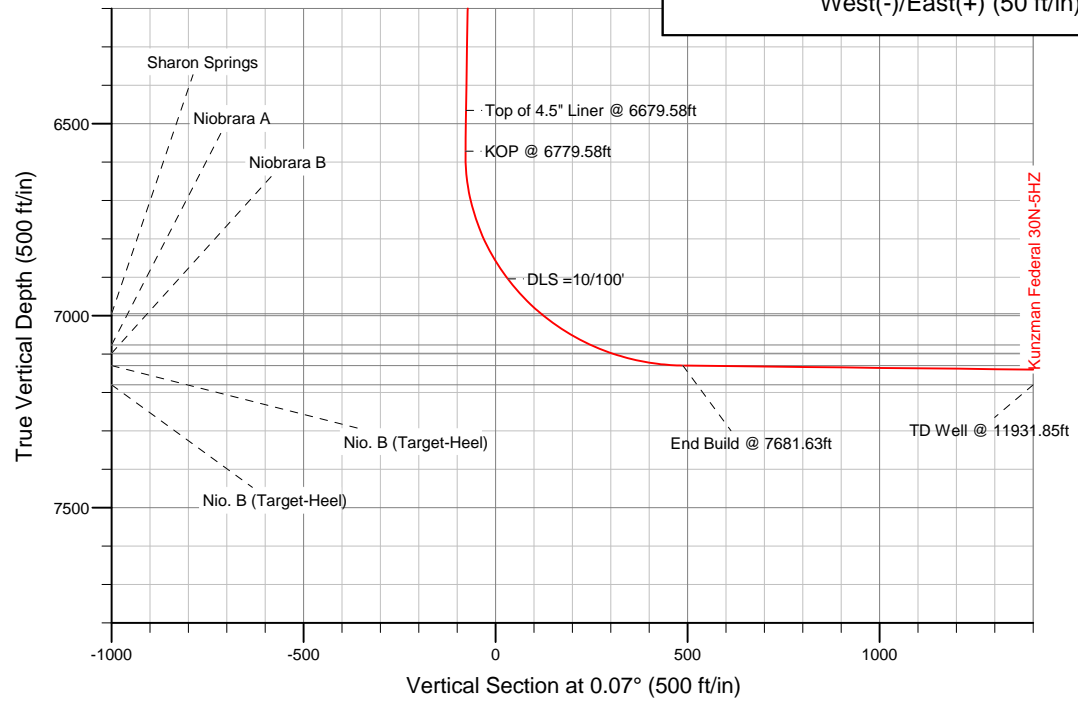
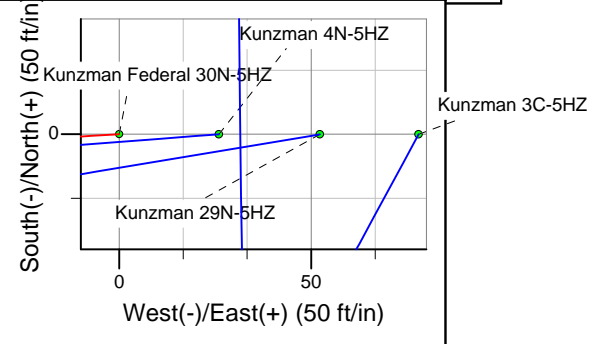
### SECTION DETAILS

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	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
3	1918.31	16.37	267.04	1907.23	-5.99	-115.93	2.00	267.04	-6.13	
4	6779.58	16.37	267.04	6571.52	-76.62	-1483.89	0.00	0.00	-78.43	
5	7681.63	89.33	0.07	7130.00	490.00	-1645.00	10.00	93.09	487.99	Kunzman Federal 30N-5HZ_CP
6	11931.85	89.33	0.07	7180.00	4739.92	-1639.85	0.00	0.00	4737.91	Kunzman Federal 30N-5HZ_BHL

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Kunzman Federal 30N-5HZ_SHL	0.00	0.00	0.00	40.159761	-104.804197	Point
Kunzman_SEC	0.00	0.00	0.00	40.159761	-104.804197	Polygon
Kunzman Federal 30N-5HZ_CP	7130.00	490.00	-1645.00	40.161106	-104.810082	Point
Kunzman Federal 30N-5HZ_BHL	7180.00	4739.92	-1639.85	40.172772	-104.810065	Point

MD	TVD	
6669.58	6465.98	Top of 4.5" Liner @ 6679.58ft
6779.58	6571.52	KOP @ 6779.58ft



WELL DETAILS: Kunzman Federal 30N-5HZ	
Ground Level:	4858.00
RKB @ 17' @ 4875.00ft (Drilling Rig)	
Plan: Plan D 0-Permit (Kunzman Federal 30N-5HZ/Plan D 0)	
Created By: Fred Hartmann Date: 06/05/2013	

**Plan Report for Kunzman Federal 30N-5HZ - Plan D 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
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
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
<b>Begin Nudge @ 1100.00ft</b>										
1,200.00	2.00	267.04	1,199.98	-0.09	-1.74	-0.09	2.00	2.00	0.00	267.04
1,300.00	4.00	267.04	1,299.84	-0.36	-6.97	-0.37	2.00	2.00	0.00	0.00
1,400.00	6.00	267.04	1,399.45	-0.81	-15.67	-0.83	2.00	2.00	0.00	0.00
1,500.00	8.00	267.04	1,498.70	-1.44	-27.84	-1.47	2.00	2.00	0.00	0.00
1,600.00	10.00	267.04	1,597.47	-2.24	-43.46	-2.30	2.00	2.00	0.00	0.00
1,700.00	12.00	267.04	1,695.62	-3.23	-62.52	-3.30	2.00	2.00	0.00	0.00
1,800.00	14.00	267.04	1,793.06	-4.39	-84.98	-4.49	2.00	2.00	0.00	0.00
1,900.00	16.00	267.04	1,889.64	-5.72	-110.83	-5.86	2.00	2.00	0.00	0.00
1,918.31	16.37	267.04	1,907.23	-5.99	-115.93	-6.13	2.00	2.00	0.00	0.00
<b>End Nudge @ 1918.31ft</b>										
2,000.00	16.37	267.04	1,985.61	-7.17	-138.91	-7.34	0.00	0.00	0.00	0.00
2,100.00	16.37	267.04	2,081.56	-8.63	-167.05	-8.83	0.00	0.00	0.00	0.00
2,200.00	16.37	267.04	2,177.50	-10.08	-195.19	-10.32	0.00	0.00	0.00	0.00
2,300.00	16.37	267.04	2,273.45	-11.53	-223.33	-11.80	0.00	0.00	0.00	0.00
2,400.00	16.37	267.04	2,369.40	-12.98	-251.47	-13.29	0.00	0.00	0.00	0.00
2,500.00	16.37	267.04	2,465.35	-14.44	-279.61	-14.78	0.00	0.00	0.00	0.00
2,600.00	16.37	267.04	2,561.30	-15.89	-307.75	-16.27	0.00	0.00	0.00	0.00
2,700.00	16.37	267.04	2,657.24	-17.34	-335.89	-17.75	0.00	0.00	0.00	0.00
2,800.00	16.37	267.04	2,753.19	-18.80	-364.03	-19.24	0.00	0.00	0.00	0.00
2,900.00	16.37	267.04	2,849.14	-20.25	-392.17	-20.73	0.00	0.00	0.00	0.00
3,000.00	16.37	267.04	2,945.09	-21.70	-420.31	-22.22	0.00	0.00	0.00	0.00
3,100.00	16.37	267.04	3,041.04	-23.16	-448.45	-23.70	0.00	0.00	0.00	0.00
3,200.00	16.37	267.04	3,136.98	-24.61	-476.59	-25.19	0.00	0.00	0.00	0.00
3,300.00	16.37	267.04	3,232.93	-26.06	-504.73	-26.68	0.00	0.00	0.00	0.00
3,400.00	16.37	267.04	3,328.88	-27.51	-532.87	-28.17	0.00	0.00	0.00	0.00
3,500.00	16.37	267.04	3,424.83	-28.97	-561.01	-29.65	0.00	0.00	0.00	0.00
3,600.00	16.37	267.04	3,520.78	-30.42	-589.15	-31.14	0.00	0.00	0.00	0.00
3,700.00	16.37	267.04	3,616.72	-31.87	-617.29	-32.63	0.00	0.00	0.00	0.00
3,800.00	16.37	267.04	3,712.67	-33.33	-645.43	-34.11	0.00	0.00	0.00	0.00
3,900.00	16.37	267.04	3,808.62	-34.78	-673.57	-35.60	0.00	0.00	0.00	0.00
4,000.00	16.37	267.04	3,904.57	-36.23	-701.71	-37.09	0.00	0.00	0.00	0.00
4,020.25	16.37	267.04	3,924.00	-36.53	-707.41	-37.39	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,100.00	16.37	267.04	4,000.52	-37.69	-729.85	-38.58	0.00	0.00	0.00	0.00
4,200.00	16.37	267.04	4,096.46	-39.14	-757.99	-40.06	0.00	0.00	0.00	0.00
4,300.00	16.37	267.04	4,192.41	-40.59	-786.13	-41.55	0.00	0.00	0.00	0.00
4,400.00	16.37	267.04	4,288.36	-42.04	-814.27	-43.04	0.00	0.00	0.00	0.00
4,437.14	16.37	267.04	4,324.00	-42.58	-824.73	-43.59	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,500.00	16.37	267.04	4,384.31	-43.50	-842.41	-44.53	0.00	0.00	0.00	0.00
4,600.00	16.37	267.04	4,480.26	-44.95	-870.55	-46.01	0.00	0.00	0.00	0.00
4,700.00	16.37	267.04	4,576.20	-46.40	-898.69	-47.50	0.00	0.00	0.00	0.00
4,800.00	16.37	267.04	4,672.15	-47.86	-926.83	-48.99	0.00	0.00	0.00	0.00
4,900.00	16.37	267.04	4,768.10	-49.31	-954.97	-50.48	0.00	0.00	0.00	0.00

**Plan Report for Kunzman Federal 30N-5HZ - Plan D 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 (°)
5,000.00	16.37	267.04	4,864.05	-50.76	-983.11	-51.96	0.00	0.00	0.00	0.00
5,100.00	16.37	267.04	4,960.00	-52.22	-1,011.25	-53.45	0.00	0.00	0.00	0.00
5,200.00	16.37	267.04	5,055.94	-53.67	-1,039.39	-54.94	0.00	0.00	0.00	0.00
5,300.00	16.37	267.04	5,151.89	-55.12	-1,067.53	-56.43	0.00	0.00	0.00	0.00
5,400.00	16.37	267.04	5,247.84	-56.57	-1,095.67	-57.91	0.00	0.00	0.00	0.00
5,500.00	16.37	267.04	5,343.79	-58.03	-1,123.81	-59.40	0.00	0.00	0.00	0.00
5,600.00	16.37	267.04	5,439.74	-59.48	-1,151.95	-60.89	0.00	0.00	0.00	0.00
5,700.00	16.37	267.04	5,535.69	-60.93	-1,180.09	-62.37	0.00	0.00	0.00	0.00
5,800.00	16.37	267.04	5,631.63	-62.39	-1,208.23	-63.86	0.00	0.00	0.00	0.00
5,900.00	16.37	267.04	5,727.58	-63.84	-1,236.37	-65.35	0.00	0.00	0.00	0.00
6,000.00	16.37	267.04	5,823.53	-65.29	-1,264.51	-66.84	0.00	0.00	0.00	0.00
6,100.00	16.37	267.04	5,919.48	-66.74	-1,292.65	-68.32	0.00	0.00	0.00	0.00
6,200.00	16.37	267.04	6,015.43	-68.20	-1,320.79	-69.81	0.00	0.00	0.00	0.00
6,300.00	16.37	267.04	6,111.37	-69.65	-1,348.93	-71.30	0.00	0.00	0.00	0.00
6,400.00	16.37	267.04	6,207.32	-71.10	-1,377.07	-72.79	0.00	0.00	0.00	0.00
6,500.00	16.37	267.04	6,303.27	-72.56	-1,405.21	-74.27	0.00	0.00	0.00	0.00
6,600.00	16.37	267.04	6,399.22	-74.01	-1,433.35	-75.76	0.00	0.00	0.00	0.00
6,669.58	16.37	267.04	6,465.98	-75.02	-1,452.93	-76.80	0.00	0.00	0.00	0.00
<b>Top of 4.5" Liner @ 6679.58ft</b>										
6,700.00	16.37	267.04	6,495.17	-75.46	-1,461.49	-77.25	0.00	0.00	0.00	0.00
6,779.58	16.37	267.04	6,571.52	-76.62	-1,483.89	-78.43	0.00	0.00	0.00	0.00
<b>KOP @ 6779.58ft</b>										
6,800.00	16.38	274.29	6,591.11	-76.55	-1,489.63	-78.37	10.00	0.07	35.50	93.09
6,900.00	19.69	305.24	6,686.40	-65.75	-1,517.52	-67.60	10.00	3.31	30.95	86.14
7,000.00	26.48	324.22	6,778.47	-37.87	-1,544.39	-39.76	10.00	6.80	18.98	56.63
7,100.00	34.78	335.29	6,864.51	6.24	-1,569.41	4.32	10.00	8.29	11.07	39.12
7,150.00	39.19	339.19	6,904.44	33.98	-1,580.99	32.05	10.00	8.83	7.80	29.56
<b>DLS =10/100'</b>										
7,200.00	43.72	342.41	6,941.91	65.24	-1,591.83	63.29	10.00	9.05	6.44	26.44
7,278.37	50.96	346.51	6,995.00	120.74	-1,607.14	118.77	10.00	9.23	5.23	24.02
<b>Sharon Springs</b>										
7,300.00	52.98	347.49	7,008.32	137.33	-1,610.97	135.36	10.00	9.34	4.54	21.24
7,400.00	62.40	351.45	7,061.73	220.33	-1,626.24	218.35	10.00	9.43	3.96	20.64
7,432.49	65.49	352.58	7,076.00	249.24	-1,630.29	247.25	10.00	9.50	3.49	18.51
<b>Niobrara A</b>										
7,492.09	71.17	354.53	7,098.00	304.25	-1,636.48	302.25	10.00	9.53	3.26	18.01
<b>Niobrara B</b>										
7,500.00	71.92	354.78	7,100.51	311.72	-1,637.18	309.72	10.00	9.55	3.13	17.29
7,600.00	81.50	357.75	7,123.47	408.71	-1,643.47	406.70	10.00	9.57	2.98	17.22
7,681.63	89.33	0.07	7,130.00	490.00	-1,645.00	487.99	10.00	9.59	2.84	16.53
<b>End Build @ 7681.63ft - Nio. B (Target-Heel) - 7" - Kunzman Federal 30N-5HZ_CP</b>										
7,700.00	89.33	0.07	7,130.22	508.37	-1,644.98	506.36	0.00	0.00	0.00	0.00
7,800.00	89.33	0.07	7,131.39	608.36	-1,644.86	606.35	0.00	0.00	0.00	0.00
7,900.00	89.33	0.07	7,132.57	708.35	-1,644.74	706.34	0.00	0.00	0.00	0.00
8,000.00	89.33	0.07	7,133.75	808.35	-1,644.61	806.34	0.00	0.00	0.00	0.00
8,100.00	89.33	0.07	7,134.92	908.34	-1,644.49	906.33	0.00	0.00	0.00	0.00
8,200.00	89.33	0.07	7,136.10	1,008.33	-1,644.37	1,006.32	0.00	0.00	0.00	0.00
8,300.00	89.33	0.07	7,137.27	1,108.32	-1,644.25	1,106.31	0.00	0.00	0.00	0.00
8,400.00	89.33	0.07	7,138.45	1,208.32	-1,644.13	1,206.31	0.00	0.00	0.00	0.00
8,500.00	89.33	0.07	7,139.63	1,308.31	-1,644.01	1,306.30	0.00	0.00	0.00	0.00
8,600.00	89.33	0.07	7,140.80	1,408.30	-1,643.89	1,406.29	0.00	0.00	0.00	0.00
8,700.00	89.33	0.07	7,141.98	1,508.30	-1,643.76	1,506.29	0.00	0.00	0.00	0.00
8,800.00	89.33	0.07	7,143.16	1,608.29	-1,643.64	1,606.28	0.00	0.00	0.00	0.00
8,900.00	89.33	0.07	7,144.33	1,708.28	-1,643.52	1,706.27	0.00	0.00	0.00	0.00
9,000.00	89.33	0.07	7,145.51	1,808.28	-1,643.40	1,806.27	0.00	0.00	0.00	0.00
9,100.00	89.33	0.07	7,146.69	1,908.27	-1,643.28	1,906.26	0.00	0.00	0.00	0.00
9,200.00	89.33	0.07	7,147.86	2,008.26	-1,643.16	2,006.25	0.00	0.00	0.00	0.00
9,300.00	89.33	0.07	7,149.04	2,108.25	-1,643.04	2,106.25	0.00	0.00	0.00	0.00
9,400.00	89.33	0.07	7,150.22	2,208.25	-1,642.92	2,206.24	0.00	0.00	0.00	0.00

**Plan Report for Kunzman Federal 30N-5HZ - Plan D 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	89.33	0.07	7,151.39	2,308.24	-1,642.79	2,306.23	0.00	0.00	0.00	0.00
9,600.00	89.33	0.07	7,152.57	2,408.23	-1,642.67	2,406.22	0.00	0.00	0.00	0.00
9,700.00	89.33	0.07	7,153.74	2,508.23	-1,642.55	2,506.22	0.00	0.00	0.00	0.00
9,800.00	89.33	0.07	7,154.92	2,608.22	-1,642.43	2,606.21	0.00	0.00	0.00	0.00
9,900.00	89.33	0.07	7,156.10	2,708.21	-1,642.31	2,706.20	0.00	0.00	0.00	0.00
10,000.00	89.33	0.07	7,157.27	2,808.21	-1,642.19	2,806.20	0.00	0.00	0.00	0.00
10,100.00	89.33	0.07	7,158.45	2,908.20	-1,642.07	2,906.19	0.00	0.00	0.00	0.00
10,200.00	89.33	0.07	7,159.63	3,008.19	-1,641.95	3,006.18	0.00	0.00	0.00	0.00
10,300.00	89.33	0.07	7,160.80	3,108.18	-1,641.82	3,106.18	0.00	0.00	0.00	0.00
10,400.00	89.33	0.07	7,161.98	3,208.18	-1,641.70	3,206.17	0.00	0.00	0.00	0.00
10,500.00	89.33	0.07	7,163.16	3,308.17	-1,641.58	3,306.16	0.00	0.00	0.00	0.00
10,600.00	89.33	0.07	7,164.33	3,408.16	-1,641.46	3,406.16	0.00	0.00	0.00	0.00
10,700.00	89.33	0.07	7,165.51	3,508.16	-1,641.34	3,506.15	0.00	0.00	0.00	0.00
10,800.00	89.33	0.07	7,166.68	3,608.15	-1,641.22	3,606.14	0.00	0.00	0.00	0.00
10,900.00	89.33	0.07	7,167.86	3,708.14	-1,641.10	3,706.13	0.00	0.00	0.00	0.00
11,000.00	89.33	0.07	7,169.04	3,808.14	-1,640.98	3,806.13	0.00	0.00	0.00	0.00
11,100.00	89.33	0.07	7,170.21	3,908.13	-1,640.85	3,906.12	0.00	0.00	0.00	0.00
11,200.00	89.33	0.07	7,171.39	4,008.12	-1,640.73	4,006.11	0.00	0.00	0.00	0.00
11,300.00	89.33	0.07	7,172.57	4,108.11	-1,640.61	4,106.11	0.00	0.00	0.00	0.00
11,400.00	89.33	0.07	7,173.74	4,208.11	-1,640.49	4,206.10	0.00	0.00	0.00	0.00
11,500.00	89.33	0.07	7,174.92	4,308.10	-1,640.37	4,306.09	0.00	0.00	0.00	0.00
11,600.00	89.33	0.07	7,176.10	4,408.09	-1,640.25	4,406.09	0.00	0.00	0.00	0.00
11,700.00	89.33	0.07	7,177.27	4,508.09	-1,640.13	4,506.08	0.00	0.00	0.00	0.00
11,800.00	89.33	0.07	7,178.45	4,608.08	-1,640.01	4,606.07	0.00	0.00	0.00	0.00
11,900.00	89.33	0.07	7,179.63	4,708.07	-1,639.88	4,706.07	0.00	0.00	0.00	0.00
11,931.85	89.33	0.07	7,180.00	4,739.92	-1,639.85	4,737.91	0.00	0.00	0.00	0.00

**Nio. B (Target-Heel) - Kunzman Federal 30N-5HZ\_BHL****Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,100.00	1,100.00	0.00	0.00	Begin Nudge @ 1100.00ft
1,918.31	1,907.23	-5.99	-115.93	End Nudge @ 1918.31ft
6,669.58	6,465.98	-75.02	-1,452.93	Top of 4.5" Liner @ 6679.58ft
6,779.58	6,571.52	-76.62	-1,483.89	KOP @ 6779.58ft
7,150.00	6,904.44	33.98	-1,580.99	DLS =10/100'
7,681.63	7,130.00	490.00	-1,645.00	End Build @ 7681.63ft
11,931.85	7,180.00	4,739.92	-1,639.85	TD Well @ 11931.85ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	0.07	Slot	0.00	0.00	0.00

**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,931.85	Plan D 0-Permit	MWD

**Plan Report for Kunzman Federal 30N-5HZ - Plan D 0-Permit****Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
800.00	800.00	9 5/8"	9-5/8	13-1/2
7,681.63	7,130.00	7"	7	8-3/4

**Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,020.25	3,924.00	Parkman		0.00	
4,437.14	4,324.00	Sussex			
7,278.37	6,995.00	Sharon Springs			
7,432.49	7,076.00	Niobrara A			
7,492.09	7,098.00	Niobrara B			
7,681.63	7,130.00	Nio. B (Target-Heel)			
11,931.85	7,180.00	Nio. B (Target-Heel)			

***Targets associated with this wellbore***

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Kunzman Federal 30N-5HZ_SHL	0.00	0.00	0.00	Point
Kunzman Federal 30N-5HZ_CP	7,130.00	490.00	-1,645.00	Point
Kunzman Federal 30N-5HZ_BHL	7,180.00	4,739.92	-1,639.85	Point
Kunzman_SEC	0.00	0.00	0.00	Polygon

## North Reference Sheet for Sec. 8-T2N-R66W - Kunzman Federal 30N-5HZ - Plan D 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' @ 4875.00ft (Drilling Rig). Northing and Easting are relative to Kunzman Federal 30N-5HZ

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: 0.99995810

Grid Coordinates of Well: 1,301,807.10 ft N, 3,194,473.06 ft E

Geographical Coordinates of Well: 40° 09' 35.14" N, 104° 48' 15.11" W

Grid Convergence at Surface is: 0.45°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,931.85ft  
the Bottom Hole Displacement is 5,015.57ft in the Direction of 340.92° (True).

Magnetic Convergence at surface is: -8.18° ( 4 June 2013, , BGGM2013)

