

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 21-T2N-66W

3D 37N-21HZ

Plan A

Plan: Plan A0 - Permit

Sperry Drilling Services

Proposal Report

17 July, 2013

Well Coordinates: 1,291,103.12 N, 3,202,350.82 E (40° 07' 48.74" N, 104° 46' 34.77" W)

Ground Level: 4,989.00 ft

Local Coordinate Origin: Centered on Well 3D 37N-21HZ

Viewing Datum: RKB = 17' @ 5006.00ft (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. 21-T2N-66W
 Well: 3D 37N-21HZ
 Wellbore: Plan A
 Design: Plan A0 - Permit



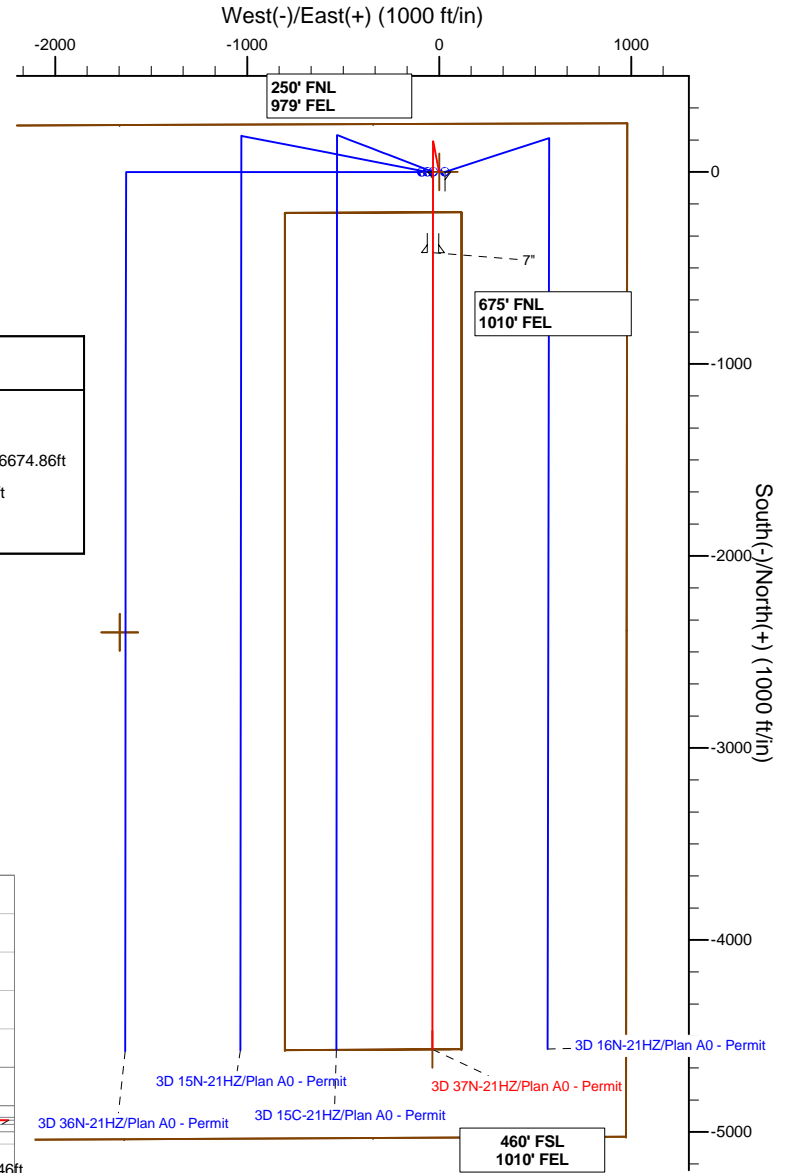
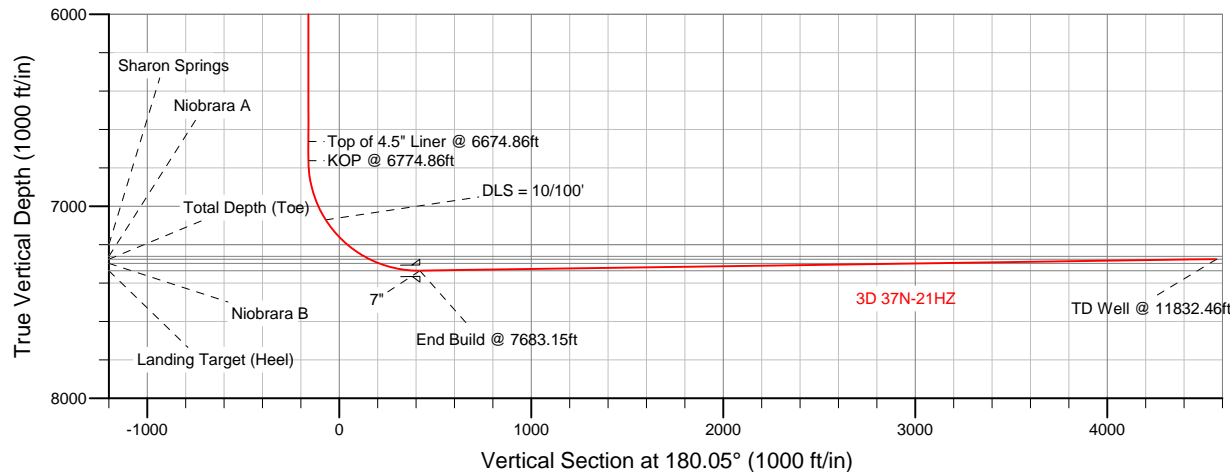
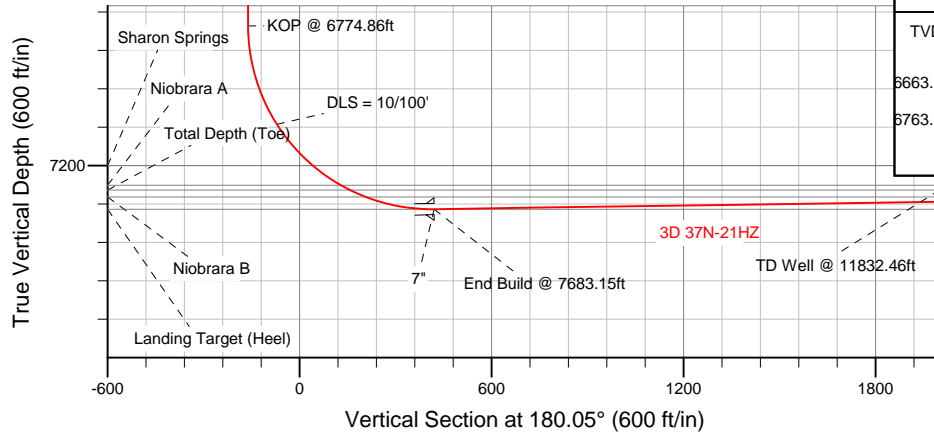
SECTION DETAILS

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	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
3	1700.00	10.00	349.00	1697.47	42.72	-8.30	2.00	349.00	-42.72	
4	2140.00	10.00	349.00	2130.78	117.72	-22.88	0.00	0.00	-117.70	
5	2640.00	0.00	0.00	2628.25	160.45	-31.19	2.00	180.00	-160.42	
6	6774.86	0.00	0.00	6763.11	160.45	-31.19	0.00	0.00	-160.42	
7	7683.15	90.83	180.05	7336.00	-420.80	-31.72	10.00	180.05	420.82	
8	11832.46	90.83	180.05	7276.00	-4569.68	-35.52	0.00	0.00	4569.71	3D 37N-21HZ_BHL

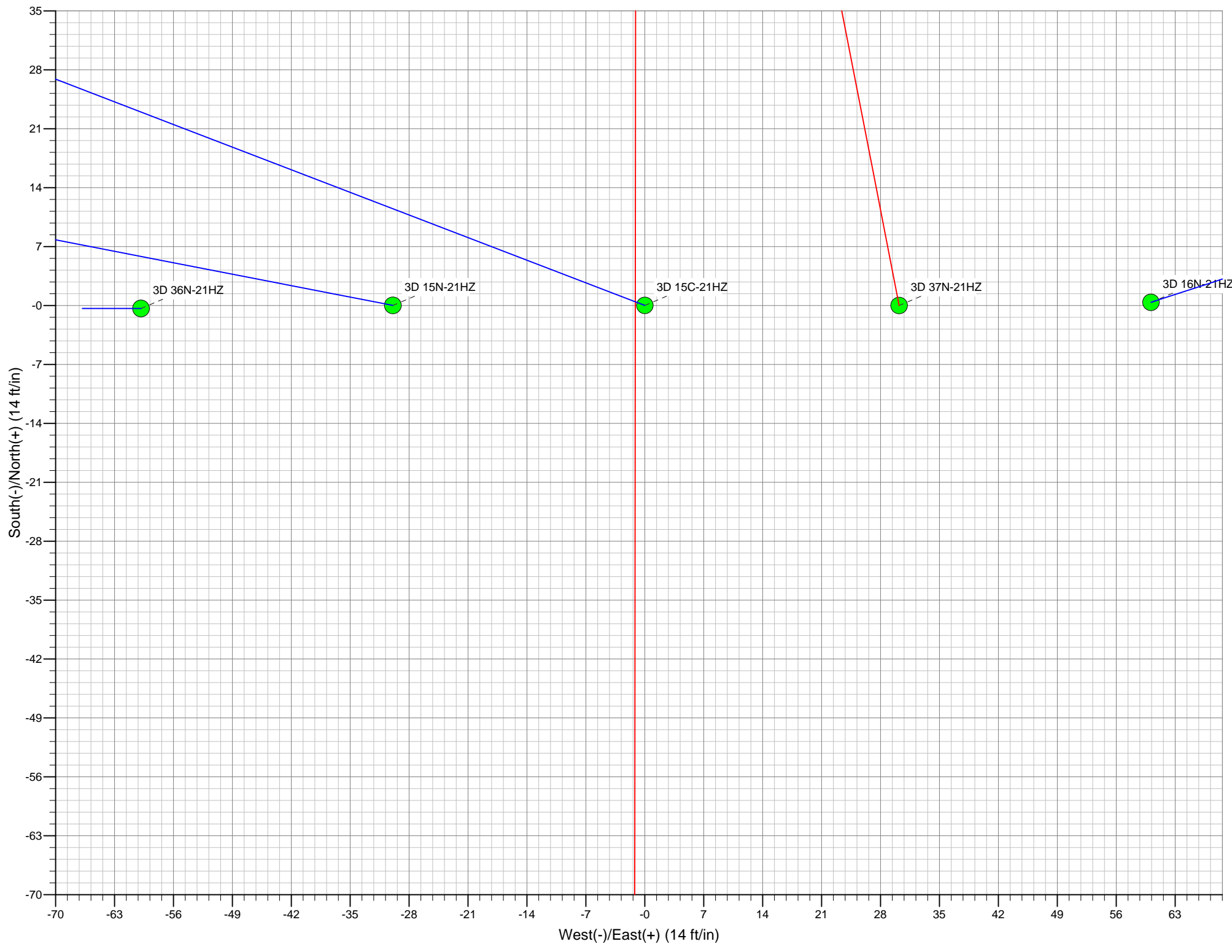
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
3D 37N-21HZ_LD	0.00	-2397.25	-1663.41	40.123624	-104.782273	Polygon
3D 37N-21HZ_SHL	0.00	0.03	0.00	40.130205	-104.776325	Point
3D_SEC	0.00	-2397.25	-1663.41	40.123624	-104.782273	Polygon
3D 37N-21HZ_BHL	7276.00	-4569.68	-35.52	40.117661	-104.776452	Point

TVD	MD	Description
6663.11	6674.86	Top of 4.5" Liner @ 6674.86ft
6763.11	6774.86	KOP @ 6774.86ft



WELL DETAILS: 3D 37N-21HZ	
Ground Level:	4989.00
RKB = 17' @ 5006.00ft (Drilling Rig)	
Plan: Plan A0 - Permit (3D 37N-21HZ/Plan A)	
Created By: Clint Eshelman	Date: 07/17/2013



Plan Report for 3D 37N-21HZ - Plan A0 - 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
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
925.00	0.00	0.00	925.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base										
975.00	0.00	0.00	975.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
Begin Nudge @ 1200.00ft										
1,300.00	2.00	349.00	1,299.98	1.71	-0.33	-1.71	2.00	2.00	0.00	349.00
1,400.00	4.00	349.00	1,399.84	6.85	-1.33	-6.85	2.00	2.00	0.00	0.00
1,500.00	6.00	349.00	1,499.45	15.41	-2.99	-15.40	2.00	2.00	0.00	0.00
1,600.00	8.00	349.00	1,598.70	27.37	-5.32	-27.36	2.00	2.00	0.00	0.00
1,700.00	10.00	349.00	1,697.47	42.72	-8.30	-42.72	2.00	2.00	0.00	0.00
End Nudge @ 1700.00ft										
1,800.00	10.00	349.00	1,795.95	59.77	-11.62	-59.76	0.00	0.00	0.00	0.00
1,900.00	10.00	349.00	1,894.43	76.81	-14.93	-76.80	0.00	0.00	0.00	0.00
2,000.00	10.00	349.00	1,992.91	93.86	-18.24	-93.84	0.00	0.00	0.00	0.00
2,100.00	10.00	349.00	2,091.39	110.91	-21.56	-110.89	0.00	0.00	0.00	0.00
2,140.00	10.00	349.00	2,130.78	117.72	-22.88	-117.70	0.00	0.00	0.00	0.00
Begin Drop @ 2140.00ft										
2,200.00	8.80	349.00	2,189.97	127.34	-24.75	-127.32	2.00	-2.00	0.00	180.00
2,300.00	6.80	349.00	2,289.04	140.67	-27.34	-140.64	2.00	-2.00	0.00	180.00
2,400.00	4.80	349.00	2,388.53	150.58	-29.27	-150.56	2.00	-2.00	0.00	180.00
2,500.00	2.80	349.00	2,488.30	157.09	-30.54	-157.06	2.00	-2.00	0.00	180.00
2,600.00	0.80	349.00	2,588.25	160.17	-31.13	-160.15	2.00	-2.00	0.00	180.00
2,640.00	0.00	0.00	2,628.25	160.45	-31.19	-160.42	2.00	-2.00	0.00	180.00
End Drop @ 2640.00ft										
2,700.00	0.00	0.00	2,688.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,788.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,888.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	2,988.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,088.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,188.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,288.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,388.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,488.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,588.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,688.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,788.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,888.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,988.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,088.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,188.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,207.75	0.00	0.00	4,196.00	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
Parkman										
4,300.00	0.00	0.00	4,288.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,388.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00

Plan Report for 3D 37N-21HZ - Plan A0 - 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)	Tooface Azimuth (°)
4,500.00	0.00	0.00	4,488.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,588.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,608.75	0.00	0.00	4,597.00	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
Sussex										
4,700.00	0.00	0.00	4,688.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,788.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,888.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,988.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,088.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,188.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,288.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,388.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,488.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,588.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,688.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,788.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,888.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,988.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,088.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,188.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,288.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,388.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,488.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,588.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,674.86	0.00	0.00	6,663.11	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6674.86ft										
6,700.00	0.00	0.00	6,688.25	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
6,774.86	0.00	0.00	6,763.11	160.45	-31.19	-160.42	0.00	0.00	0.00	0.00
KOP @ 6774.86ft										
6,800.00	2.51	180.05	6,788.24	159.90	-31.19	-159.87	10.00	10.00	0.00	180.05
6,850.00	7.51	180.05	6,838.03	155.53	-31.19	-155.50	10.00	10.00	0.00	0.00
6,900.00	12.51	180.05	6,887.25	146.84	-31.20	-146.81	10.00	10.00	0.00	0.00
6,950.00	17.51	180.05	6,935.53	133.89	-31.21	-133.86	10.00	10.00	0.00	0.00
7,000.00	22.51	180.05	6,982.50	116.78	-31.23	-116.75	10.00	10.00	0.00	0.00
7,050.00	27.51	180.05	7,027.79	95.64	-31.25	-95.62	10.00	10.00	0.00	0.00
7,100.00	32.51	180.05	7,071.07	70.64	-31.27	-70.61	10.00	10.00	0.00	0.00
DLS = 10/100'										
7,150.00	37.51	180.05	7,112.01	41.96	-31.30	-41.93	10.00	10.00	0.00	0.00
7,200.00	42.51	180.05	7,150.29	9.82	-31.33	-9.80	10.00	10.00	0.00	0.00
7,250.00	47.51	180.05	7,185.63	-25.53	-31.36	25.56	10.00	10.00	0.00	0.00
7,271.73	49.69	180.05	7,200.00	-41.83	-31.37	41.86	10.00	10.00	0.00	0.00
Sharon Springs										
7,300.00	52.51	180.05	7,217.75	-63.83	-31.39	63.85	10.00	10.00	0.00	0.00
7,350.00	57.51	180.05	7,246.41	-104.78	-31.43	104.81	10.00	10.00	0.00	0.00
7,378.27	60.34	180.05	7,261.00	-128.99	-31.45	129.02	10.00	10.00	0.00	0.00
Niobrara A										
7,400.00	62.51	180.05	7,271.39	-148.07	-31.47	148.10	10.00	10.00	0.00	0.00
7,450.00	67.51	180.05	7,292.50	-193.38	-31.51	193.41	10.00	10.00	0.00	0.00
7,464.84	69.00	180.05	7,298.00	-207.16	-31.52	207.19	10.00	10.00	0.00	0.00
Niobrara B										
7,500.00	72.51	180.05	7,309.59	-240.35	-31.55	240.38	10.00	10.00	0.00	0.00
7,550.00	77.51	180.05	7,322.51	-288.64	-31.60	288.66	10.00	10.00	0.00	0.00
7,600.00	82.51	180.05	7,331.18	-337.86	-31.64	337.89	10.00	10.00	0.00	0.00
7,650.00	87.51	180.05	7,335.52	-387.66	-31.69	387.69	10.00	10.00	0.00	0.00
7,683.15	90.83	180.05	7,336.00	-420.80	-31.72	420.83	10.00	10.00	0.00	0.00
End Build @ 7683.15ft - Landing Target (Heel) - 7"										
7,700.00	90.83	180.05	7,335.76	-437.65	-31.74	437.68	0.00	0.00	0.00	0.00
7,800.00	90.83	180.05	7,334.31	-537.64	-31.83	537.67	0.00	0.00	0.00	0.00
7,900.00	90.83	180.05	7,332.87	-637.63	-31.92	637.65	0.00	0.00	0.00	0.00

Plan Report for 3D 37N-21HZ - Plan A0 - 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 (°)
8,000.00	90.83	180.05	7,331.42	-737.62	-32.01	737.64	0.00	0.00	0.00	0.00
8,100.00	90.83	180.05	7,329.98	-837.61	-32.10	837.63	0.00	0.00	0.00	0.00
8,200.00	90.83	180.05	7,328.53	-937.60	-32.19	937.62	0.00	0.00	0.00	0.00
8,300.00	90.83	180.05	7,327.08	-1,037.59	-32.28	1,037.61	0.00	0.00	0.00	0.00
8,400.00	90.83	180.05	7,325.64	-1,137.57	-32.38	1,137.60	0.00	0.00	0.00	0.00
8,500.00	90.83	180.05	7,324.19	-1,237.56	-32.47	1,237.59	0.00	0.00	0.00	0.00
8,600.00	90.83	180.05	7,322.75	-1,337.55	-32.56	1,337.58	0.00	0.00	0.00	0.00
8,700.00	90.83	180.05	7,321.30	-1,437.54	-32.65	1,437.57	0.00	0.00	0.00	0.00
8,800.00	90.83	180.05	7,319.85	-1,537.53	-32.74	1,537.56	0.00	0.00	0.00	0.00
8,900.00	90.83	180.05	7,318.41	-1,637.52	-32.83	1,637.55	0.00	0.00	0.00	0.00
9,000.00	90.83	180.05	7,316.96	-1,737.51	-32.93	1,737.54	0.00	0.00	0.00	0.00
9,100.00	90.83	180.05	7,315.51	-1,837.50	-33.02	1,837.53	0.00	0.00	0.00	0.00
9,200.00	90.83	180.05	7,314.07	-1,937.49	-33.11	1,937.52	0.00	0.00	0.00	0.00
9,300.00	90.83	180.05	7,312.62	-2,037.48	-33.20	2,037.51	0.00	0.00	0.00	0.00
9,400.00	90.83	180.05	7,311.18	-2,137.47	-33.29	2,137.50	0.00	0.00	0.00	0.00
9,500.00	90.83	180.05	7,309.73	-2,237.46	-33.38	2,237.49	0.00	0.00	0.00	0.00
9,600.00	90.83	180.05	7,308.28	-2,337.45	-33.48	2,337.48	0.00	0.00	0.00	0.00
9,700.00	90.83	180.05	7,306.84	-2,437.44	-33.57	2,437.47	0.00	0.00	0.00	0.00
9,800.00	90.83	180.05	7,305.39	-2,537.43	-33.66	2,537.46	0.00	0.00	0.00	0.00
9,900.00	90.83	180.05	7,303.95	-2,637.42	-33.75	2,637.45	0.00	0.00	0.00	0.00
10,000.00	90.83	180.05	7,302.50	-2,737.41	-33.84	2,737.44	0.00	0.00	0.00	0.00
10,100.00	90.83	180.05	7,301.05	-2,837.40	-33.93	2,837.42	0.00	0.00	0.00	0.00
10,200.00	90.83	180.05	7,299.61	-2,937.39	-34.02	2,937.41	0.00	0.00	0.00	0.00
10,300.00	90.83	180.05	7,298.16	-3,037.38	-34.12	3,037.40	0.00	0.00	0.00	0.00
10,400.00	90.83	180.05	7,296.72	-3,137.36	-34.21	3,137.39	0.00	0.00	0.00	0.00
10,500.00	90.83	180.05	7,295.27	-3,237.35	-34.30	3,237.38	0.00	0.00	0.00	0.00
10,600.00	90.83	180.05	7,293.82	-3,337.34	-34.39	3,337.37	0.00	0.00	0.00	0.00
10,700.00	90.83	180.05	7,292.38	-3,437.33	-34.48	3,437.36	0.00	0.00	0.00	0.00
10,800.00	90.83	180.05	7,290.93	-3,537.32	-34.57	3,537.35	0.00	0.00	0.00	0.00
10,900.00	90.83	180.05	7,289.48	-3,637.31	-34.67	3,637.34	0.00	0.00	0.00	0.00
11,000.00	90.83	180.05	7,288.04	-3,737.30	-34.76	3,737.33	0.00	0.00	0.00	0.00
11,100.00	90.83	180.05	7,286.59	-3,837.29	-34.85	3,837.32	0.00	0.00	0.00	0.00
11,200.00	90.83	180.05	7,285.15	-3,937.28	-34.94	3,937.31	0.00	0.00	0.00	0.00
11,300.00	90.83	180.05	7,283.70	-4,037.27	-35.03	4,037.30	0.00	0.00	0.00	0.00
11,400.00	90.83	180.05	7,282.25	-4,137.26	-35.12	4,137.29	0.00	0.00	0.00	0.00
11,500.00	90.83	180.05	7,280.81	-4,237.25	-35.22	4,237.28	0.00	0.00	0.00	0.00
11,600.00	90.83	180.05	7,279.36	-4,337.24	-35.31	4,337.27	0.00	0.00	0.00	0.00
11,700.00	90.83	180.05	7,277.92	-4,437.23	-35.40	4,437.26	0.00	0.00	0.00	0.00
11,800.00	90.83	180.05	7,276.47	-4,537.22	-35.49	4,537.25	0.00	0.00	0.00	0.00
11,832.46	90.83	180.05	7,276.00	-4,569.67	-35.52	4,569.70	0.00	0.00	0.00	0.00

TD Well @ 11832.46ft - Total Depth (Toe) - 3D 37N-21HZ_BHL

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.00	1,200.00	0.00	0.00	Begin Nudge @ 1200.00ft
1,700.00	1,697.47	42.72	-8.30	End Nudge @ 1700.00ft
2,140.00	2,130.78	117.72	-22.88	Begin Drop @ 2140.00ft
2,640.00	2,628.25	160.45	-31.19	End Drop @ 2640.00ft
6,674.86	6,663.11	160.45	-31.19	Top of 4.5" Liner @ 6674.86ft
6,774.86	6,763.11	160.45	-31.19	KOP @ 6774.86ft
7,100.00	7,071.07	70.64	-31.27	DLS = 10/100'
7,683.15	7,336.00	-420.80	-31.72	End Build @ 7683.15ft
11,832.46	7,276.00	-4,569.67	-35.52	TD Well @ 11832.46ft

Plan Report for 3D 37N-21HZ - Plan A0 - Permit**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	180.05	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,832.46	Plan A0 - Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
975.00	975.00	9 5/8"	9-5/8	13-1/2
7,683.15	7,336.00	7"	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
925.00	925.00	Fox Hills Base		0.00	
4,207.75	4,196.00	Parkman		0.00	
4,608.75	4,597.00	Sussex		0.00	
7,271.73	7,200.00	Sharon Springs		0.00	
7,378.27	7,261.00	Niobrara A		0.00	
7,464.84	7,298.00	Niobrara B		0.00	
7,683.15	7,336.00	Landing Target (Heel)		0.00	
11,832.46	7,276.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
3D 37N-21HZ_BHL	7,276.00	-4,569.68	-35.52	Point
3D 37N-21HZ_LD	0.00	-2,397.25	-1,663.41	Polygon
3D_SEC	0.00	-2,397.25	-1,663.41	Polygon
3D 37N-21HZ_SHL	0.00	0.03	0.00	Point

North Reference Sheet for Sec. 21-T2N-66W - 3D 37N-21HZ - Plan A

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' @ 5006.00ft (Drilling Rig). Northing and Easting are relative to 3D 37N-21HZ

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: 0.99995905

Grid Coordinates of Well: 1,291,103.12 ft N, 3,202,350.82 ft E

Geographical Coordinates of Well: 40° 07' 48.74" N, 104° 46' 34.77" W

Grid Convergence at Surface is: 0.47°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,832.46ft
the Bottom Hole Displacement is 4,569.81ft in the Direction of 180.45° (True).

Magnetic Convergence at surface is: -8.13° (17 July 2013, , BGGM2013)

