

Anadarko Petroleum Corp.

Adams County, CO (NAD83)

Sec. 14-T3S-R65W

Richardson 14-37-1H

Plan A Rev 0

Plan: Plan A Rev 0 Proposal

Sperry Drilling Services

Proposal Report

26 March, 2012

Well Coordinates: 1,165,630.59 N, 3,246,014.76 E (39° 47' 04.89" N, 104° 37' 28.59" W)

Ground Level: 5,441.00 ft

Local Coordinate Origin:

Centered on Well Richardson 14-37-1H

Viewing Datum:

RKB=25' @ 5466.00ft (Unknown Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Version: 2003.16 Build: 431

HALLIBURTON

Project: Adams County, CO (NAD83)
Site: Sec. 14-T3S-R65W
Well: Richardson 14-37-1H
Wellbore: Plan A Rev 0
Design: Plan A Rev 0 Proposal

Anadarko Petroleum Corp.

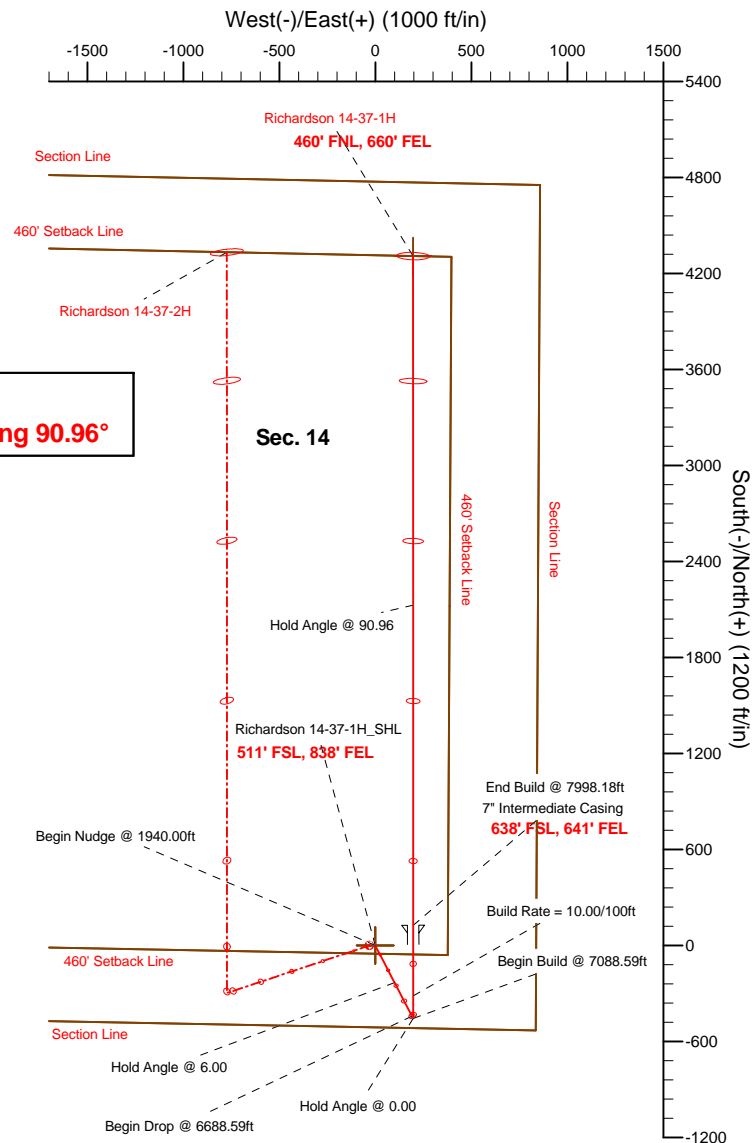
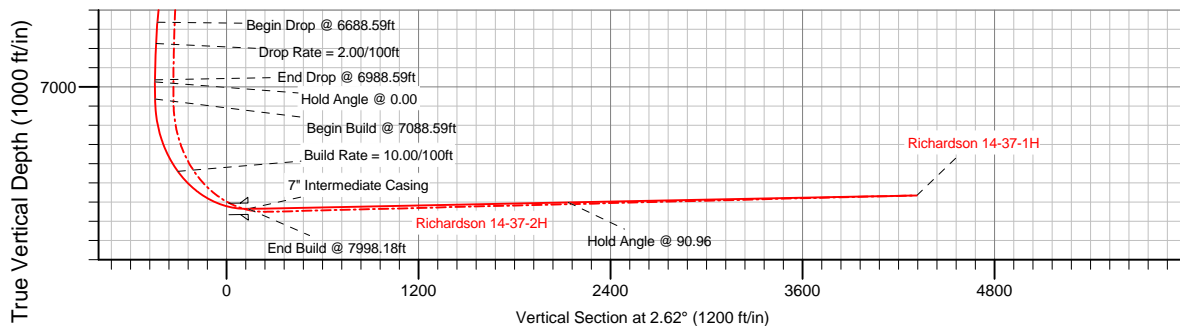
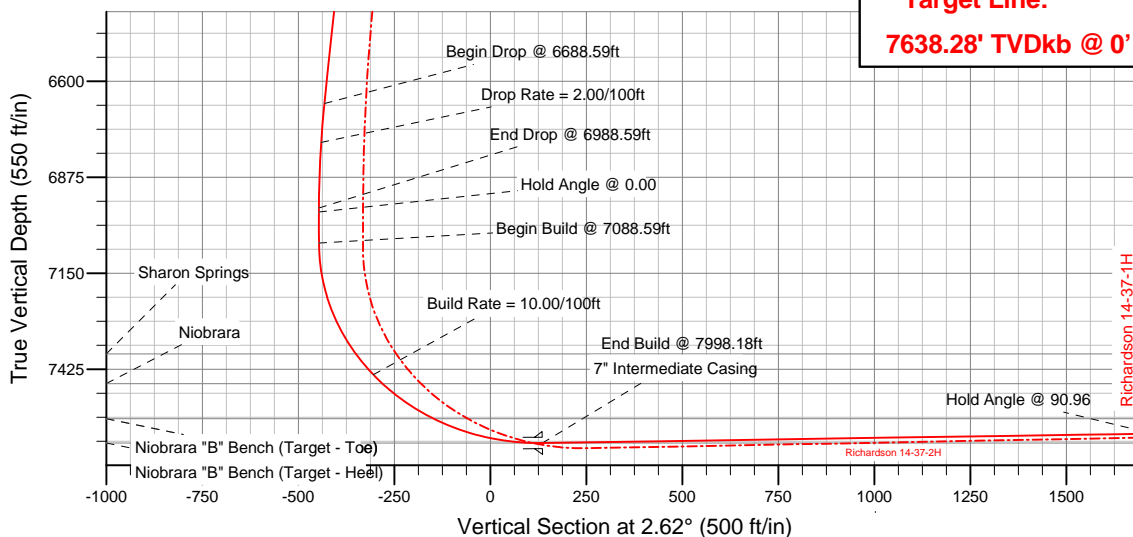
HALLIBURTON
Sperry Drilling

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	1840.00	0.00	0.00	1840.00	0.00	0.00	0.00	0.00	0.00	
3	1940.00	0.00	0.00	1940.00	0.00	0.00	0.00	0.00	0.00	
4	2240.00	6.00	156.60	2239.45	-14.40	6.23	2.00	156.60	-14.10	
5	6688.59	6.00	156.60	6663.67	-441.16	190.91	0.00	0.00	-431.99	
6	6988.59	0.00	0.00	6963.12	-455.57	197.14	2.00	180.00	-446.09	
7	7088.59	0.00	0.00	7063.12	-455.57	197.14	0.00	0.00	-446.09	
8	7998.18	90.96	360.00	7636.00	126.98	197.12	10.00	360.00	135.85	
9	12181.19	90.96	360.00	7566.00	4309.41	196.94	0.00	0.00	4313.91	Richardson 14-37-1H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Richardson 14-37-1H_SHL	0.00	0.00	0.00	39.784692	-104.624607	Point
Richardson 14-37-xH_460' Setback Lines	0.00	0.00	0.00	39.784692	-104.624607	Polygon
Richardson 14-37-xH_Section Lines	0.00	0.00	0.00	39.784692	-104.624607	Polygon
Richardson 14-37-1H_BHL	7566.00	4309.41	196.94	39.796522	-104.623906	Point



WELL DETAILS: Richardson 14-37-1H	
Ground Level: 5441.00	RKB=25' @ 5466.00ft (Unknown Rig)
Plan: Plan A Rev 0 Proposal (Richardson 14-37-1H/Plan A Rev 0)	
Created By: Fred Hartmann	Date: 03/26/2012
Reviewed: _____	Date: _____

Plan Report for Richardson 14-37-1H - Plan A Rev 0 Proposal

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
Richardson 14-37-1H_SHL - Richardson 14-37-xH_460' Setback Lines - Richardson 14-37-xH_Section 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
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
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
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,691.00	0.00	0.00	1,691.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills										
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,840.00	0.00	0.00	1,840.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tie-On to Surface Casing (Assume Vertical) @ 1840.00ft										
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hold Angle @ 0.00										
1,940.00	0.00	0.00	1,940.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1940.00ft										
2,000.00	1.20	156.60	2,000.00	-0.58	0.25	-0.56	2.00	2.00	0.00	156.60
2,100.00	3.20	156.60	2,099.92	-4.10	1.77	-4.01	2.00	2.00	0.00	0.00
Nudge Rate = 2.00/100ft										
2,200.00	5.20	156.60	2,199.64	-10.82	4.68	-10.60	2.00	2.00	0.00	0.00
2,240.00	6.00	156.60	2,239.45	-14.40	6.23	-14.10	2.00	2.00	0.00	0.00
End Nudge @ 2240.00ft										
2,300.00	6.00	156.60	2,299.12	-20.16	8.72	-19.74	0.00	0.00	0.00	0.00
2,400.00	6.00	156.60	2,398.58	-29.75	12.87	-29.13	0.00	0.00	0.00	0.00
2,500.00	6.00	156.60	2,498.03	-39.35	17.03	-38.53	0.00	0.00	0.00	0.00
2,523.10	6.00	156.60	2,521.00	-41.56	17.99	-40.70	0.00	0.00	0.00	0.00
Parkman										
2,600.00	6.00	156.60	2,597.48	-48.94	21.18	-47.92	0.00	0.00	0.00	0.00
2,700.00	6.00	156.60	2,696.93	-58.53	25.33	-57.31	0.00	0.00	0.00	0.00
2,800.00	6.00	156.60	2,796.38	-68.12	29.48	-66.71	0.00	0.00	0.00	0.00
2,900.00	6.00	156.60	2,895.84	-77.72	33.63	-76.10	0.00	0.00	0.00	0.00
3,000.00	6.00	156.60	2,995.29	-87.31	37.78	-85.49	0.00	0.00	0.00	0.00
3,100.00	6.00	156.60	3,094.74	-96.90	41.93	-94.89	0.00	0.00	0.00	0.00
3,200.00	6.00	156.60	3,194.19	-106.50	46.09	-104.28	0.00	0.00	0.00	0.00
3,300.00	6.00	156.60	3,293.65	-116.09	50.24	-113.68	0.00	0.00	0.00	0.00
3,400.00	6.00	156.60	3,393.10	-125.68	54.39	-123.07	0.00	0.00	0.00	0.00
3,500.00	6.00	156.60	3,492.55	-135.28	58.54	-132.46	0.00	0.00	0.00	0.00
3,600.00	6.00	156.60	3,592.00	-144.87	62.69	-141.86	0.00	0.00	0.00	0.00
3,700.00	6.00	156.60	3,691.45	-154.46	66.84	-151.25	0.00	0.00	0.00	0.00
3,800.00	6.00	156.60	3,790.91	-164.06	70.99	-160.64	0.00	0.00	0.00	0.00
3,900.00	6.00	156.60	3,890.36	-173.65	75.14	-170.04	0.00	0.00	0.00	0.00
4,000.00	6.00	156.60	3,989.81	-183.24	79.30	-179.43	0.00	0.00	0.00	0.00
4,100.00	6.00	156.60	4,089.26	-192.84	83.45	-188.82	0.00	0.00	0.00	0.00
4,200.00	6.00	156.60	4,188.71	-202.43	87.60	-198.22	0.00	0.00	0.00	0.00
4,300.00	6.00	156.60	4,288.17	-212.02	91.75	-207.61	0.00	0.00	0.00	0.00
4,400.00	6.00	156.60	4,387.62	-221.61	95.90	-217.01	0.00	0.00	0.00	0.00

Plan Report for Richardson 14-37-1H - Plan A Rev 0 Proposal

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 (°)
4,500.00	6.00	156.60	4,487.07	-231.21	100.05	-226.40	0.00	0.00	0.00	0.00
Hold Angle @ 6.00										
4,600.00	6.00	156.60	4,586.52	-240.80	104.20	-235.79	0.00	0.00	0.00	0.00
4,700.00	6.00	156.60	4,685.98	-250.39	108.36	-245.19	0.00	0.00	0.00	0.00
4,800.00	6.00	156.60	4,785.43	-259.99	112.51	-254.58	0.00	0.00	0.00	0.00
4,900.00	6.00	156.60	4,884.88	-269.58	116.66	-263.97	0.00	0.00	0.00	0.00
5,000.00	6.00	156.60	4,984.33	-279.17	120.81	-273.37	0.00	0.00	0.00	0.00
5,100.00	6.00	156.60	5,083.78	-288.77	124.96	-282.76	0.00	0.00	0.00	0.00
5,200.00	6.00	156.60	5,183.24	-298.36	129.11	-292.15	0.00	0.00	0.00	0.00
5,232.94	6.00	156.60	5,216.00	-301.52	130.48	-295.25	0.00	0.00	0.00	0.00
Sussex										
5,300.00	6.00	156.60	5,282.69	-307.95	133.26	-301.55	0.00	0.00	0.00	0.00
5,400.00	6.00	156.60	5,382.14	-317.55	137.41	-310.94	0.00	0.00	0.00	0.00
5,464.21	6.00	156.60	5,446.00	-323.71	140.08	-316.97	0.00	0.00	0.00	0.00
Shannon										
5,500.00	6.00	156.60	5,481.59	-327.14	141.57	-320.34	0.00	0.00	0.00	0.00
5,600.00	6.00	156.60	5,581.05	-336.73	145.72	-329.73	0.00	0.00	0.00	0.00
5,700.00	6.00	156.60	5,680.50	-346.33	149.87	-339.12	0.00	0.00	0.00	0.00
5,800.00	6.00	156.60	5,779.95	-355.92	154.02	-348.52	0.00	0.00	0.00	0.00
5,900.00	6.00	156.60	5,879.40	-365.51	158.17	-357.91	0.00	0.00	0.00	0.00
6,000.00	6.00	156.60	5,978.85	-375.11	162.32	-367.30	0.00	0.00	0.00	0.00
6,100.00	6.00	156.60	6,078.31	-384.70	166.47	-376.70	0.00	0.00	0.00	0.00
6,200.00	6.00	156.60	6,177.76	-394.29	170.63	-386.09	0.00	0.00	0.00	0.00
6,300.00	6.00	156.60	6,277.21	-403.88	174.78	-395.48	0.00	0.00	0.00	0.00
6,400.00	6.00	156.60	6,376.66	-413.48	178.93	-404.88	0.00	0.00	0.00	0.00
6,500.00	6.00	156.60	6,476.12	-423.07	183.08	-414.27	0.00	0.00	0.00	0.00
6,600.00	6.00	156.60	6,575.57	-432.66	187.23	-423.67	0.00	0.00	0.00	0.00
6,688.59	6.00	156.60	6,663.67	-441.16	190.91	-431.99	0.00	0.00	0.00	0.00
Begin Drop @ 6688.59ft										
6,700.00	5.77	156.60	6,675.02	-442.24	191.37	-433.04	2.00	-2.00	0.00	180.00
6,800.00	3.77	156.60	6,774.67	-449.87	194.68	-440.51	2.00	-2.00	0.00	-180.00
Drop Rate = 2.00/100ft										
6,900.00	1.77	156.60	6,874.55	-454.31	196.60	-444.86	2.00	-2.00	0.00	180.00
6,988.59	0.00	0.00	6,963.12	-455.57	197.14	-446.09	2.00	-2.00	0.00	-180.00
End Drop @ 6988.59ft										
7,000.00	0.00	0.00	6,974.53	-455.57	197.14	-446.09	0.00	0.00	0.00	0.00
Hold Angle @ 0.00										
7,088.59	0.00	0.00	7,063.12	-455.57	197.14	-446.09	0.00	0.00	0.00	0.00
Begin Build @ 7088.59ft										
7,100.00	1.14	360.00	7,074.53	-455.45	197.14	-445.98	10.00	10.00	0.00	360.00
7,200.00	11.14	360.00	7,173.83	-444.77	197.14	-435.30	10.00	10.00	0.00	0.00
7,300.00	21.14	360.00	7,269.77	-417.00	197.14	-407.57	10.00	10.00	0.00	0.00
7,400.00	31.14	360.00	7,359.43	-373.00	197.14	-363.61	10.00	10.00	0.00	0.00
7,425.56	33.70	360.00	7,381.00	-359.30	197.14	-349.92	10.00	10.00	0.00	0.00
Sharon Springs										
7,500.00	41.14	360.00	7,440.08	-314.10	197.13	-304.77	10.00	10.00	0.00	0.00
Build Rate = 10.00/100ft										
7,535.39	44.68	360.00	7,466.00	-290.00	197.13	-280.70	10.00	10.00	0.00	0.00
Niobrara										
7,600.00	51.14	360.00	7,509.28	-242.08	197.13	-232.83	10.00	10.00	0.00	0.00
7,700.00	61.14	360.00	7,564.93	-159.15	197.13	-149.98	10.00	10.00	0.00	0.00
7,702.23	61.36	360.00	7,566.00	-157.19	197.13	-148.02	10.00	10.00	0.00	0.00
Niobrara "B" Bench (Target - Toe)										
7,800.00	71.14	360.00	7,605.32	-67.81	197.12	-58.74	10.00	10.00	0.00	0.00
7,900.00	81.14	360.00	7,629.24	29.16	197.12	38.13	10.00	10.00	0.00	0.00
7,998.15	90.96	360.00	7,636.00	126.95	197.12	135.82	10.00	10.00	0.00	0.00
Niobrara "B" Bench (Target - Heel)										
7,998.18	90.96	360.00	7,636.00	126.98	197.12	135.85	0.00	0.00	0.00	0.00

Plan Report for Richardson 14-37-1H - Plan A Rev 0 Proposal

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 (°)
End Build @ 7998.18ft - 7" Intermediate Casing										
8,000.00	90.96	360.00	7,635.97	128.80	197.12	137.67	0.00	0.00	0.00	0.00
8,100.00	90.96	360.00	7,634.30	228.79	197.11	237.55	0.00	0.00	0.00	0.00
8,200.00	90.96	360.00	7,632.62	328.78	197.11	337.43	0.00	0.00	0.00	0.00
8,300.00	90.96	360.00	7,630.95	428.76	197.10	437.31	0.00	0.00	0.00	0.00
8,400.00	90.96	360.00	7,629.28	528.75	197.10	537.19	0.00	0.00	0.00	0.00
8,500.00	90.96	360.00	7,627.60	628.73	197.10	637.08	0.00	0.00	0.00	0.00
8,600.00	90.96	360.00	7,625.93	728.72	197.09	736.96	0.00	0.00	0.00	0.00
8,700.00	90.96	360.00	7,624.26	828.71	197.09	836.84	0.00	0.00	0.00	0.00
8,800.00	90.96	360.00	7,622.58	928.69	197.08	936.72	0.00	0.00	0.00	0.00
8,900.00	90.96	360.00	7,620.91	1,028.68	197.08	1,036.60	0.00	0.00	0.00	0.00
9,000.00	90.96	360.00	7,619.23	1,128.66	197.07	1,136.48	0.00	0.00	0.00	0.00
9,100.00	90.96	360.00	7,617.56	1,228.65	197.07	1,236.37	0.00	0.00	0.00	0.00
9,200.00	90.96	360.00	7,615.89	1,328.64	197.07	1,336.25	0.00	0.00	0.00	0.00
9,300.00	90.96	360.00	7,614.21	1,428.62	197.06	1,436.13	0.00	0.00	0.00	0.00
9,400.00	90.96	360.00	7,612.54	1,528.61	197.06	1,536.01	0.00	0.00	0.00	0.00
9,500.00	90.96	360.00	7,610.87	1,628.59	197.05	1,635.89	0.00	0.00	0.00	0.00
9,600.00	90.96	360.00	7,609.19	1,728.58	197.05	1,735.77	0.00	0.00	0.00	0.00
9,700.00	90.96	360.00	7,607.52	1,828.57	197.05	1,835.65	0.00	0.00	0.00	0.00
9,800.00	90.96	360.00	7,605.85	1,928.55	197.04	1,935.54	0.00	0.00	0.00	0.00
9,900.00	90.96	360.00	7,604.17	2,028.54	197.04	2,035.42	0.00	0.00	0.00	0.00
10,000.00	90.96	360.00	7,602.50	2,128.52	197.03	2,135.30	0.00	0.00	0.00	0.00
Hold Angle @ 90.96										
10,100.00	90.96	360.00	7,600.83	2,228.51	197.03	2,235.18	0.00	0.00	0.00	0.00
10,200.00	90.96	360.00	7,599.15	2,328.50	197.02	2,335.06	0.00	0.00	0.00	0.00
10,300.00	90.96	360.00	7,597.48	2,428.48	197.02	2,434.94	0.00	0.00	0.00	0.00
10,400.00	90.96	360.00	7,595.81	2,528.47	197.02	2,534.83	0.00	0.00	0.00	0.00
10,500.00	90.96	360.00	7,594.13	2,628.45	197.01	2,634.71	0.00	0.00	0.00	0.00
10,600.00	90.96	360.00	7,592.46	2,728.44	197.01	2,734.59	0.00	0.00	0.00	0.00
10,700.00	90.96	360.00	7,590.79	2,828.43	197.00	2,834.47	0.00	0.00	0.00	0.00
10,800.00	90.96	360.00	7,589.11	2,928.41	197.00	2,934.35	0.00	0.00	0.00	0.00
10,900.00	90.96	360.00	7,587.44	3,028.40	197.00	3,034.23	0.00	0.00	0.00	0.00
11,000.00	90.96	360.00	7,585.77	3,128.38	196.99	3,134.12	0.00	0.00	0.00	0.00
11,100.00	90.96	360.00	7,584.09	3,228.37	196.99	3,234.00	0.00	0.00	0.00	0.00
11,200.00	90.96	360.00	7,582.42	3,328.36	196.98	3,333.88	0.00	0.00	0.00	0.00
11,300.00	90.96	360.00	7,580.75	3,428.34	196.98	3,433.76	0.00	0.00	0.00	0.00
11,400.00	90.96	360.00	7,579.07	3,528.33	196.97	3,533.64	0.00	0.00	0.00	0.00
11,500.00	90.96	360.00	7,577.40	3,628.31	196.97	3,633.52	0.00	0.00	0.00	0.00
11,600.00	90.96	360.00	7,575.73	3,728.30	196.97	3,733.40	0.00	0.00	0.00	0.00
11,700.00	90.96	360.00	7,574.05	3,828.29	196.96	3,833.29	0.00	0.00	0.00	0.00
11,800.00	90.96	360.00	7,572.38	3,928.27	196.96	3,933.17	0.00	0.00	0.00	0.00
11,900.00	90.96	360.00	7,570.71	4,028.26	196.95	4,033.05	0.00	0.00	0.00	0.00
12,000.00	90.96	360.00	7,569.03	4,128.24	196.95	4,132.93	0.00	0.00	0.00	0.00
12,100.00	90.96	360.00	7,567.36	4,228.23	196.95	4,232.81	0.00	0.00	0.00	0.00
12,181.19	90.96	360.00	7,566.00	4,309.41	196.94	4,313.91	0.00	0.00	0.00	0.00
Total Depth @ 12181.19ft - Richardson 14-37-1H_BHL										

Plan Report for Richardson 14-37-1H - Plan A Rev 0 Proposal

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,840.00	1,840.00	0.00	0.00	Tie-On to Surface Casing (Assume Vertical) @ 1840.00ft
1,900.00	1,900.00	0.00	0.00	Hold Angle @ 0.00
1,940.00	1,940.00	0.00	0.00	Begin Nudge @ 1940.00ft
2,100.00	2,099.92	-4.10	1.77	Nudge Rate = 2.00/100ft
2,240.00	2,239.45	-14.40	6.23	End Nudge @ 2240.00ft
4,500.00	4,487.07	-231.21	100.05	Hold Angle @ 6.00
6,688.59	6,663.67	-441.16	190.91	Begin Drop @ 6688.59ft
6,800.00	6,774.67	-449.87	194.68	Drop Rate = 2.00/100ft
6,988.59	6,963.12	-455.57	197.14	End Drop @ 6988.59ft
7,000.00	6,974.53	-455.57	197.14	Hold Angle @ 0.00
7,088.59	7,063.12	-455.57	197.14	Begin Build @ 7088.59ft
7,500.00	7,440.08	-314.10	197.13	Build Rate = 10.00/100ft
7,998.18	7,636.00	126.98	197.12	End Build @ 7998.18ft
10,000.00	7,602.50	2,128.52	197.03	Hold Angle @ 90.96
12,181.19	7,566.00	4,309.41	196.94	Total Depth @ 12181.19ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
Target	Richardson 14-37-1H_BHL	2.62	Slot	0.00	0.00	7,566.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,180.85	Plan A Rev 0 Proposal	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,998.18	7,636.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,691.00	1,691.00	Fox Hills			
2,523.10	2,521.00	Parkman			
5,232.94	5,216.00	Sussex			
5,464.21	5,446.00	Shannon			
7,425.56	7,381.00	Sharon Springs			
7,535.39	7,466.00	Niobrara			
7,702.23	7,566.00	Niobrara "B" Bench (Target - Toe)			
7,998.15	7,636.00	Niobrara "B" Bench (Target - Heel)			

Plan Report for Richardson 14-37-1H - Plan A Rev 0 Proposal

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Richardson 14-37-1H_SHL	0.00	0.00	0.00	Point
Richardson 14-37-xH_460' Setback Lines	0.00	0.00	0.00	Polygon
Richardson 14-37-xH_Section Lines	0.00	0.00	0.00	Polygon
Richardson 14-37-1H_BHL	7,566.00	4,309.41	196.94	Point

North Reference Sheet for Sec. 14-T3S-R65W - Richardson 14-37-1H - 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=25' @ 5466.00ft (Unknown Rig). Northing and Easting are relative to Richardson 14-37-1H

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: 0.99998972

Grid Coordinates of Well: 1,165,630.59 ft N, 3,246,014.76 ft E

Geographical Coordinates of Well: 39° 47' 04.89" N, 104° 37' 28.59" W

Grid Convergence at Surface is: 0.57°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,181.19ft the Bottom Hole Displacement is 4,313.91ft in the Direction of 2.62° (True).

Magnetic Convergence at surface is: -8.06° (1 April 2012, , BGGM2011)

