

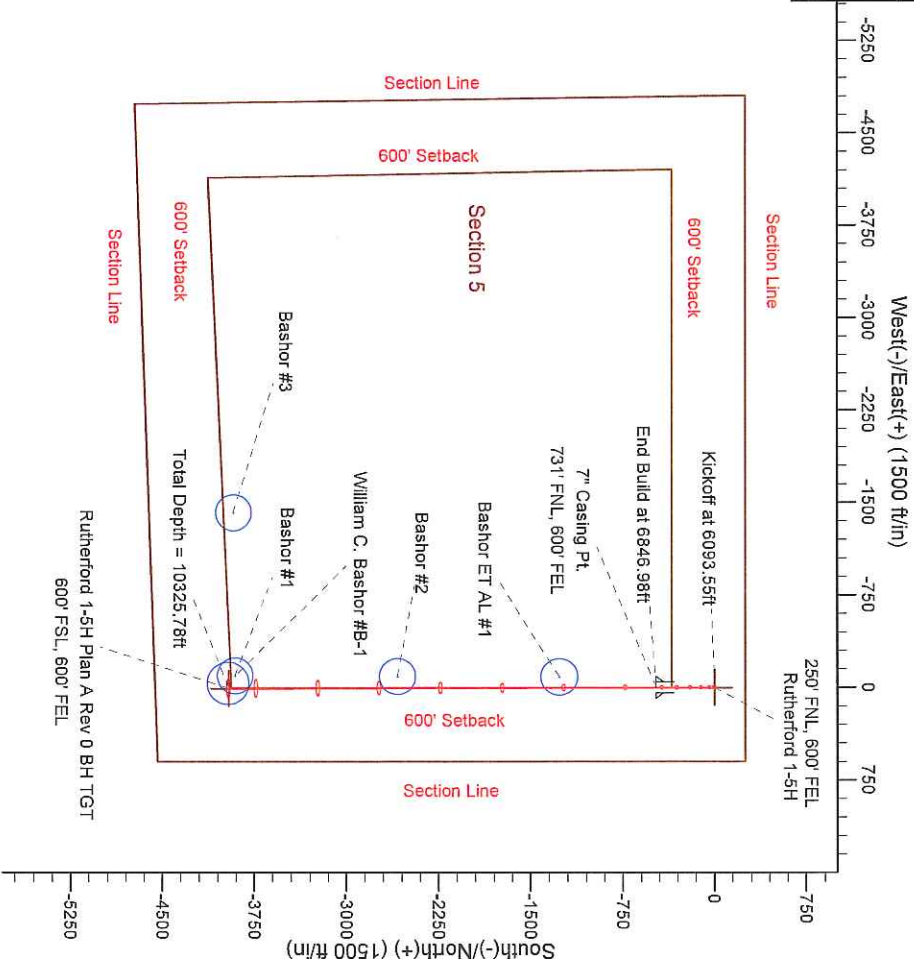
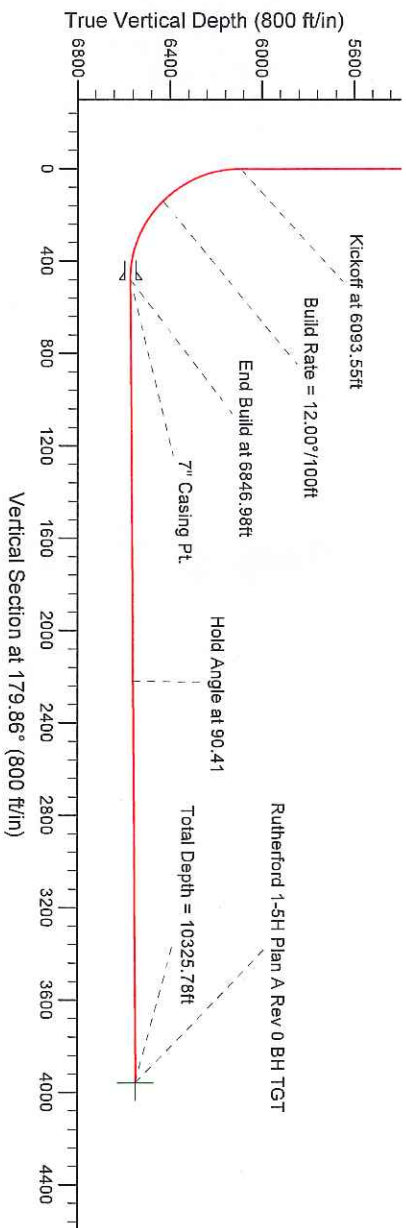
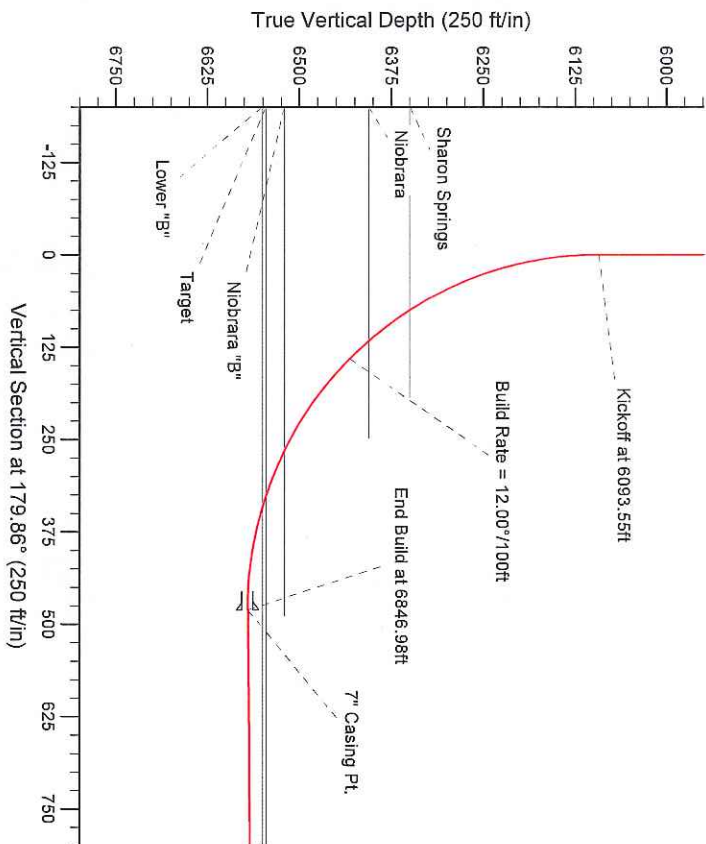
Project: Weld County, CO  
 Site: Sec. 5-T9N-R61W  
 Well: Rutherford 1-5H  
 Wellbore: Plan A Rev 0  
 Design: Plan A Rev 0 Proposal

# Continental Resources, Inc.

**HALLIBURTON**  
 Sperry Drilling

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	D/Leg	T/Face	V/Sec Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	6093.55	0.00	0.00	6093.55	0.00	0.00	0.00	0.00	0.00
3	6846.98	90.41	179.86	6571.00	-480.90	1.14	12.00	179.86	480.90
4	10325.78	90.41	179.86	6546.00	-3959.59	9.42	0.00	0.00	3959.60

Rutherford 1-5H Plan A Rev 0 BH TGT



WELL DETAILS: Rutherford 1-5H			
North	Ground Level:	4973.00	Longitude
1530676.63	Easting	3353743.58	-104.222610
	Latitude	40.783098	

Plan: Plan A Rev 0 Proposal (Rutherford 1-5H/Plan A Rev 0)

Created By: Steve Rieger Date: 16:25, April 13 2011

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# Continental Resources, Inc.

Weld County, CO  
Sec. 5-T9N-R61W  
Rutherford 1-5H

Plan A Rev 0

Plan: Plan A Rev 0 Proposal

## Sperry Drilling Services Proposal Report

13 April, 2011

Well Coordinates: 1,530,676.63 N, 3,353,743.58 E (40° 46' 59.15" N, 104° 13' 21.40" W)  
Ground Level: 4,973.00 ft

Local Coordinate Origin:	Centered on Well Rutherford 1-5H
Viewing Datum:	KB (RKB 16 ft.) @ 4989.00ft (Original Well Elev)
TVDs to System:	N
North Reference:	True
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied  
Version: 2003.16 Build: 431

**HALLIBURTON**

## Plan Report for Rutherford 1-5H - 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
645.00	0.00	0.00	645.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre</b>										
3,709.00	0.00	0.00	3,709.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Laramie</b>										
6,093.55	0.00	0.00	6,093.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Kickoff at 6093.55ft</b>										
6,364.27	32.49	179.86	6,350.00	-74.72	0.18	74.72	12.00	12.00	0.00	179.86
<b>Sharon Springs</b>										
6,434.16	40.87	179.86	6,406.00	-116.43	0.28	116.43	12.00	12.00	0.00	0.00
<b>Niobrara</b>										
6,470.00	45.17	179.86	6,432.19	-140.87	0.34	140.87	12.00	12.00	0.00	0.00
<b>Build Rate = 12.00°/100ft</b>										
6,623.05	63.54	179.86	6,521.00	-264.72	0.63	264.72	12.00	12.00	0.00	0.00
<b>Niobrara "B"</b>										
6,688.31	71.37	179.86	6,546.00	-324.95	0.77	324.95	12.00	12.00	0.00	0.00
<b>Target</b>										
6,704.81	73.35	179.86	6,551.00	-340.67	0.81	340.67	12.00	12.00	0.00	0.00
<b>Lower "B"</b>										
6,846.98	90.41	179.86	6,571.00	-480.89	1.14	480.89	12.00	12.00	0.00	0.00
<b>End Build at 6846.98ft - 7" Casing Pt.</b>										
8,586.00	90.41	179.86	6,558.50	-2,219.86	5.28	2,219.87	0.00	0.00	0.00	0.00
<b>Hold Angle at 90.41</b>										
10,325.78	90.41	179.86	6,546.00	-3,959.59	9.42	3,959.60	0.00	0.00	0.00	0.00
<b>Rutherford 1-5H Plan A Rev 0 BH TGT</b>										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
6,093.55	6,093.55	0.00	0.00	Kickoff at 6093.55ft
6,470.00	6,432.19	-140.87	0.34	Build Rate = 12.00°/100ft
6,846.98	6,571.00	-480.89	1.14	End Build at 6846.98ft
8,586.00	6,558.50	-2,219.86	5.28	Hold Angle at 90.41
10,325.78	6,546.00	-3,959.59	9.42	Total Depth = 10325.78ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	+E/-W (ft)	Start TVD (ft)
Target	Rutherford 1-5H Plan A Rev 0 BH TGT	179.86	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	10,325.73	Plan A Rev 0 Proposal	MWD

**Plan Report for Rutherford 1-5H - Plan A Rev 0 Proposal**

**Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
6,846.98	6,571.00	7" Casing Pt.	7	8-3/4

**Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
645.00	645.00	Pierre		0.00	
3,709.00	3,709.00	Laramie		0.00	
6,364.27	6,350.00	Sharon Springs		0.00	
6,434.16	6,406.00	Niobrara		0.00	
6,623.05	6,521.00	Niobrara "B"		0.00	
6,688.31	6,546.00	Target		0.00	
6,704.81	6,551.00	Lower "B"		0.00	

***Targets associated with this wellbore***

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Rutherford 1-5H Plan A Rev 0 BH TGT	6,546.00	-3,959.59	9.42	Point
Rutherford 1-5H 600 ft Setbacks	0.00	-0.02	0.00	Polygon
Rutherford 1-5H Section Lines	0.00	-0.02	0.00	Polygon



**HALLIBURTON****North Reference Sheet for Sec. 5-T9N-R61W - Rutherford 1-5H - 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 KB (RKB 16 ft.) @ 4989.00ft (Original Well Elev). Northing and Easting are relative to Rutherford 1-5H

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: 0.99999996

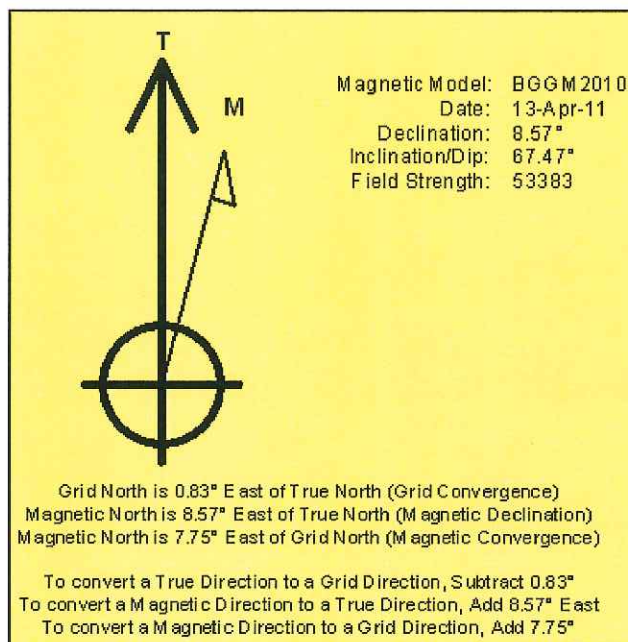
Grid Coordinates of Well: 1,530,676.63 ft N, 3,353,743.58 ft E

Geographical Coordinates of Well: 40° 46' 59.15" N, 104° 13' 21.40" W

Grid Convergence at Surface is: 0.83°

Based upon Minimum Curvature type calculations, at a Measured Depth of 10,325.78ft  
the Bottom Hole Displacement is 3,959.60ft in the Direction of 179.86° (True).

Magnetic Convergence at surface is: -7.75° (13 April 2011, , BGGM2010)



4/11/2011

# **DRILLING PROGNOSIS**

Prospect: Rutherford 1-5H      Location: Sec. 5-9N-61W  
Weld Co., CO

☒ Staked      Surface Location: 250'      FNL & 600'      FEL  
☐ Pre-Staked      Sec. 5-9N-61W  
Weld Co., CO

GL (ft): 4,973      BHL Lateral: 600'      FSL & 600'      FEL  
RKB (ft) : 16      Sec. 5-9N-61W  
KB est (ft): 4,989      Weld Co., CO

FORMATION	SUBSEA DEPTH	TVD
Pierre	4344	645
Laramie	1280	3,709
Sharon Springs	-1361	6,350
Niobrara	-1417	6,406
Niobrara "B"	-1532	6,521
Lower "B"	-1562	6,551
Target	-1582	6,571
Target @ TD	-1557	6,546

**PRELIMINARY DRILLING PROGRAM**

4/14/2011

Lease and Well No. Rutherford 1-5H

**MUD PROGRAM**

Depth	Type	Weight	Remarks
0 - 801	Fresh Water	8.4-8.8	26-27 sec
801 - 6097	Fresh water, Polymer	8.4-8.7	26-27 sec, PHPA
6097 - 6847	Fresh water, Polymer	8.8-10.0	26-48 sec, Polymer Sweeps
6847 - 10326	Fresh water	9.6-10.0	28-36 sec

**TUBULAR PROGRAM**

String Type	Hole Size	Depth	Feet	Casing Diameter	Weight, Grade, Connection	ERW/Seamless	Critical Inspection
Surface	13 1/2 "	801	801	9 5/8 "	9 5/8" 36 ppf I-55 STC	ERW	ERW
Intermediate	8 3/4 "	6847	6847	7 "	7", 26 ppf P110 LTC	SMLS	BCI & Drift
Liner	6 "	10326	4720	4 1/2 "	4-1/2" 11.6 ppf P110 Butt	SMLS	BCI & Drift
Tubing	2 7/8 "	6097	8558	2 7/8 "	2-7/8" 6.5# L-80 EUE		

Notes: Pipe to end up in hole from top to bottom as shown.

**CEMENT PROGRAM**

String Type	SHOE/DV Depth	Stage Lead/Tail	Cement Bottom	Cement Top	No Sacks	Cement System	Cement Yield	Cement Weight
Surf	801	Lead	450	0	181		2.13	11.5
		Tail	801	450	199	Type 1, 3% CaCl <sub>2</sub> , 2% gyp, SMS, 1/4 lb/sk cel	1.51	14.2
	75% excess							
Int	6847	Lead	5597	0	422	Premium G 35/65 Pozz	2.49	12.2
	25% excess	Tail	6847	5,597	732		1.46	15.6
	(Basis: Gauge hole +25% excess, Tail to 500 ft above KOP)					Class G, 50/50 Pozz		

**BOP PROGRAM**

Hole Size	Configuration	Pressure Rating	BOP Test Press	Casing Test Press
13 1/2 "	Circulate Conductor			
8 3/4 "	RRA	3M	3000	
6 1/4 "	RRA	3M	3000	
	Utilize commercial testers every 30 days.			

**LOGGING PROGRAM**

FROM	TO	TOOLS
KOP	TD	2 man mud logger trailer, 30 ft samples
Surf csg	TD	MWD Surveys, 90 ft & 30 ft thru curve
KOP	TD	MWD Gamma Ray
Surface	DDO	CBL, CCL, GR

Remarks: 4 1/2" Liner to be run. Liner Top above KOP, pre-perforated toe, swell packers (23 ea.) to be run with liner.

Prepared By: \_\_\_\_\_

Date: 3/24/2011