

Conoco Phillips Company

SweetwaterCounty, Wyoming

Sec.2-T4S-R64W

Cline 4-64-2-1H

Plan A

Plan: Plan A Rev 0 (Lateral)

Sperry Drilling Services

Proposal Report

12 March, 2013

Well Coordinates: 251,221.15 S, 3,161,358.04 E (39° 43' 58.09" N, 104° 30' 33.14" W)

Ground Level: 5,586.00 ft

Local Coordinate Origin:

Centered on Well Cline 4-64-2-1H

Viewing Datum:

Rkb 24 ft @ 5610.00ft (H&P 280)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Version: 2003.16 Build: 43I

HALLIBURTON

Conoco Phillips Company

The diagram illustrates the wellbore profile and plan view for Cline 4-64-2-1H/Plan A Rev 0 (Pilot Hole). The vertical section on the left shows the wellbore profile with a kick-off point at 6782.05 ft, a build rate of 10.00°/100 ft, and an end build at 7684.02 ft. The stratigraphic column includes Sharon Springs Shale, Niobrara Fm., Niobrara B, Niobrara C Chalk, Niobrara D Chalk, Fort Hays Limestone, Carlisle Shale, and Greenhorn. The plan view on the right shows the wellbore profile with a 460' setback, a 7-inch casing point, and a total depth of 11660.12 ft. The bottom of the diagram shows a vertical section at 271.32° (600 ft/in) with a drop rate of 2.00°/100 ft and a total depth of 11660.12 ft.

Plan Report for Cline 4-64-2-1H - Plan A Rev 0 (Lateral)

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 (°)
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tie-On to Surface Casing (Assuming Vertical) @ 6500.00 ft										
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,782.05	0.00	0.00	6,782.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kick Off Point 6782.05 ft										
6,800.00	1.80	271.32	6,800.00	0.01	-0.28	0.28	10.00	10.00	0.00	271.32
6,900.00	11.80	271.32	6,899.17	0.28	-12.09	12.10	10.00	10.00	0.00	0.00
7,000.00	21.80	271.32	6,994.78	0.94	-40.95	40.96	10.00	10.00	0.00	0.00
7,100.00	31.80	271.32	7,083.93	1.98	-85.96	85.98	10.00	10.00	0.00	0.00
Build Rate 10.00 °/100 ft										
7,200.00	41.80	271.32	7,163.91	3.36	-145.76	145.80	10.00	10.00	0.00	0.00
7,300.00	51.80	271.32	7,232.28	5.03	-218.54	218.60	10.00	10.00	0.00	0.00
7,400.00	61.80	271.32	7,286.98	6.96	-302.08	302.16	10.00	10.00	0.00	0.00
7,500.00	71.80	271.32	7,326.33	9.07	-393.85	393.96	10.00	10.00	0.00	0.00
7,600.00	81.80	271.32	7,349.14	11.31	-491.06	491.19	10.00	10.00	0.00	0.00
7,684.02	90.20	271.32	7,355.00	13.24	-574.78	574.93	10.00	10.00	0.00	0.00
End Build 7684.02 ft - 7" Casing Pt.										
7,700.00	90.20	271.32	7,354.95	13.61	-590.75	590.91	0.00	0.00	0.00	0.00
7,800.00	90.20	271.32	7,354.61	15.91	-690.72	690.91	0.00	0.00	0.00	0.00
7,900.00	90.20	271.32	7,354.26	18.21	-790.70	790.91	0.00	0.00	0.00	0.00
8,000.00	90.20	271.32	7,353.92	20.52	-890.67	890.91	0.00	0.00	0.00	0.00
Hold Inc 90.20°, Azi 271.32°										
8,100.00	90.20	271.32	7,353.58	22.82	-990.64	990.91	0.00	0.00	0.00	0.00
8,200.00	90.20	271.32	7,353.23	25.12	-1,090.62	1,090.90	0.00	0.00	0.00	0.00
8,300.00	90.20	271.32	7,352.89	27.43	-1,190.59	1,190.90	0.00	0.00	0.00	0.00
8,400.00	90.20	271.32	7,352.55	29.73	-1,290.56	1,290.90	0.00	0.00	0.00	0.00
8,500.00	90.20	271.32	7,352.20	32.03	-1,390.53	1,390.90	0.00	0.00	0.00	0.00
8,559.10	90.20	271.32	7,352.00	33.39	-1,449.62	1,450.00	0.00	0.00	0.00	0.00
Begin Drop 8559.10 ft - Cline 4-64-2-1H PAR0 WP1 Tgt										
8,600.00	89.38	271.32	7,352.15	34.34	-1,490.51	1,490.90	2.00	-2.00	0.00	-180.00
Drop Rate 2.00 °/100 ft										
8,673.04	87.92	271.32	7,353.87	36.02	-1,563.50	1,563.92	2.00	-2.00	0.00	-180.00
End Drop 8673.04 ft										
8,700.00	87.92	271.32	7,354.85	36.64	-1,590.44	1,590.86	0.00	0.00	0.00	0.00
8,800.00	87.92	271.32	7,358.49	38.94	-1,690.35	1,690.80	0.00	0.00	0.00	0.00
8,900.00	87.92	271.32	7,362.12	41.24	-1,790.25	1,790.73	0.00	0.00	0.00	0.00
9,000.00	87.92	271.32	7,365.75	43.54	-1,890.16	1,890.66	0.00	0.00	0.00	0.00
9,100.00	87.92	271.32	7,369.39	45.84	-1,990.07	1,990.60	0.00	0.00	0.00	0.00
9,200.00	87.92	271.32	7,373.02	48.14	-2,089.98	2,090.53	0.00	0.00	0.00	0.00
9,300.00	87.92	271.32	7,376.65	50.45	-2,189.88	2,190.47	0.00	0.00	0.00	0.00
9,400.00	87.92	271.32	7,380.28	52.75	-2,289.79	2,290.40	0.00	0.00	0.00	0.00
9,500.00	87.92	271.32	7,383.92	55.05	-2,389.70	2,390.33	0.00	0.00	0.00	0.00
9,600.00	87.92	271.32	7,387.55	57.35	-2,489.61	2,490.27	0.00	0.00	0.00	0.00
Hold Inc 87.92°, Azi 271.32°										
9,700.00	87.92	271.32	7,391.18	59.65	-2,589.51	2,590.20	0.00	0.00	0.00	0.00
9,800.00	87.92	271.32	7,394.82	61.95	-2,689.42	2,690.14	0.00	0.00	0.00	0.00
9,900.00	87.92	271.32	7,398.45	64.26	-2,789.33	2,790.07	0.00	0.00	0.00	0.00
10,000.00	87.92	271.32	7,402.08	66.56	-2,889.24	2,890.00	0.00	0.00	0.00	0.00
10,100.00	87.92	271.32	7,405.71	68.86	-2,989.14	2,989.94	0.00	0.00	0.00	0.00
10,200.00	87.92	271.32	7,409.35	71.16	-3,089.05	3,089.87	0.00	0.00	0.00	0.00
10,300.00	87.92	271.32	7,412.98	73.46	-3,188.96	3,189.81	0.00	0.00	0.00	0.00
10,400.00	87.92	271.32	7,416.61	75.76	-3,288.87	3,289.74	0.00	0.00	0.00	0.00
10,500.00	87.92	271.32	7,420.25	78.06	-3,388.77	3,389.67	0.00	0.00	0.00	0.00
10,600.00	87.92	271.32	7,423.88	80.37	-3,488.68	3,489.61	0.00	0.00	0.00	0.00
10,606.33	87.92	271.32	7,424.11	80.51	-3,495.00	3,495.93	0.00	0.00	0.00	0.00
Begin Build 10606.33 ft										

Plan Report for Cline 4-64-2-1H - Plan A Rev 0 (Lateral)

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 (°)
10,700.00	89.79	271.32	7,425.98	82.67	-3,588.63	3,589.58	2.00	2.00	0.00	0.00
10,710.42	90.00	271.32	7,426.00	82.91	-3,599.05	3,600.00	2.00	2.00	0.00	0.00
End Build 10710.42 ft - Cline 4-64-2-1H PAR0_WP2 Tgt										
10,800.00	90.00	271.32	7,426.00	84.97	-3,688.60	3,689.58	0.00	0.00	0.00	0.00
10,900.00	90.00	271.32	7,426.00	87.27	-3,788.58	3,789.58	0.00	0.00	0.00	0.00
11,000.00	90.00	271.32	7,426.00	89.58	-3,888.55	3,889.58	0.00	0.00	0.00	0.00
11,100.00	90.00	271.32	7,426.00	91.88	-3,988.52	3,989.58	0.00	0.00	0.00	0.00
11,200.00	90.00	271.32	7,426.00	94.18	-4,088.50	4,089.58	0.00	0.00	0.00	0.00
Hold Inc 90.00°, Azi 271.32°										
11,300.00	90.00	271.32	7,426.00	96.49	-4,188.47	4,189.58	0.00	0.00	0.00	0.00
11,400.00	90.00	271.32	7,426.00	98.79	-4,288.44	4,289.58	0.00	0.00	0.00	0.00
11,500.00	90.00	271.32	7,426.00	101.09	-4,388.42	4,389.58	0.00	0.00	0.00	0.00
11,600.00	90.00	271.32	7,426.00	103.39	-4,488.39	4,489.58	0.00	0.00	0.00	0.00
11,660.12	90.00	271.32	7,426.00	104.78	-4,548.50	4,549.70	0.00	0.00	0.00	0.00
Total Depth 11660.12 ft - Cline 4-64-2-1H PAR0_BHL Tgt										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,500.00	6,500.00	0.00	0.00	Tie-On to Surface Casing (Assuming Vertical) @ 6500.00 ft
6,782.05	6,782.05	0.00	0.00	Kick Off Point 6782.05 ft
7,100.00	7,083.93	1.98	-85.96	Build Rate 10.00 °/100 ft
7,684.02	7,355.00	13.24	-574.77	End Build 7684.02 ft
8,000.00	7,353.92	20.52	-890.67	Hold Inc 90.20°, Azi 271.32°
8,559.10	7,352.00	33.39	-1,449.62	Begin Drop 8559.10 ft
8,600.00	7,352.15	34.34	-1,490.51	Drop Rate 2.00 °/100 ft
8,673.04	7,353.87	36.02	-1,563.50	End Drop 8673.04 ft
9,600.00	7,387.55	57.35	-2,489.61	Hold Inc 87.92°, Azi 271.32°
10,606.33	7,424.11	80.51	-3,495.00	Begin Build 10606.33 ft
10,710.42	7,426.00	82.91	-3,599.05	End Build 10710.42 ft
11,200.00	7,426.00	94.18	-4,088.50	Hold Inc 90.00°, Azi 271.32°
11,660.12	7,426.00	104.78	-4,548.50	Total Depth 11660.12 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Cline 4-64-2-1H PAR0_BHL Tgt	271.32	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
6,500.00	11,660.12	Plan A Rev 0 (Lateral)	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,684.02	7,355.00	7" Casing Pt.	7	8-3/4

Plan Report for Cline 4-64-2-1H - Plan A Rev 0 (Lateral)

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Sec.2-T4S-R64W SB	0.00	0.00	0.00	Polygon
Cline 4-64-2-1H PAR0_BHL Tgt	7,426.00	104.78	-4,548.50	Point
Cline 4-64-2-1H PAR0_WP2 Tgt	7,426.00	82.91	-3,599.05	Point
Sec.2-T4S-R64W SL	0.00	0.00	0.00	Polygon
Cline 4-64-2-1H PAR0_WP1 Tgt	7,352.00	33.39	-1,449.62	Point

North Reference Sheet for Sec.2-T4S-R64W - Cline 4-64-2-1H - 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 24 ft @ 5610.00ft (H&P 280). Northing and Easting are relative to Cline 4-64-2-1H
Coordinate System is US State Plane 1983, Wyoming West Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)
Central Meridian is -108.75°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:0° 0' 0.000 N°
False Easting: 1,968,500.00ft, False Northing: 0.00ft, Scale Reduction: 1.00156453

Grid Coordinates of Well: -251,221.15 ft N, 3,161,358.04 ft E
Geographical Coordinates of Well: 39° 43' 58.09" N, 104° 30' 33.14" W
Grid Convergence at Surface is: 2.71°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,660.12ft
the Bottom Hole Displacement is 4,549.70ft in the Direction of 271.32° (True).

Magnetic Convergence at surface is: -5.76° (30 May 2013, , BGGM2012)

