

Conoco Phillips Company

Arapahoe County, Colorado

Sec. 3-T5S-R64W

Tebo 3-1H

Plan B

Plan: Plan B Rev 0 (Lateral)

Sperry Drilling Services

Proposal Report

03 July, 2012

Well Coordinates: 1,663,106.19 N, 3,273,131.94 E (39° 39' 00.07" N, 104° 31' 47.98" W)

Ground Level: 5,875.00 ft

Local Coordinate Origin:

Centered on Well Tebo 3-1H

Viewing Datum:

RKB 24 ft @ 5899.00ft (H&P 280)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Version: 2003.16 Build: 431

HALLIBURTON

Project: Arapahoe County, Colorado
Site: Sec. 3-T5S-R64W
Well: Tebo 3-1H
Wellbore: Plan B
Design: Plan B Rev 0 (Lateral)

Conoco Phillips Company

HALLIBURTON

Sperry Drilling

WELL DETAILS: Tebo 3-1H

Ground Level: 5875.00 Northing: 1663106.19 Easting: 3273131.94 Latitude: 39° 39' 0.068 N Longitude: 104° 31' 47.978 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	0.00	0.00	
2	7069.04	0.00	0.00	7069.04	0.00	0.00	0.00	0.00	0.00	
3	7969.04	90.00	270.42	7642.00	4.18	-572.94	10.00	270.42	572.96	
4	11792.27	90.00	270.42	7642.00	32.07	-4396.07	0.00	0.00	4396.18	Tebo 3-1H BHL

Plan: Plan B Rev 0 (Lateral) (Tebo 3-1H/Plan B)

Created By: Matthew R. Epp

Date: 07-03-2012

Checked: _____

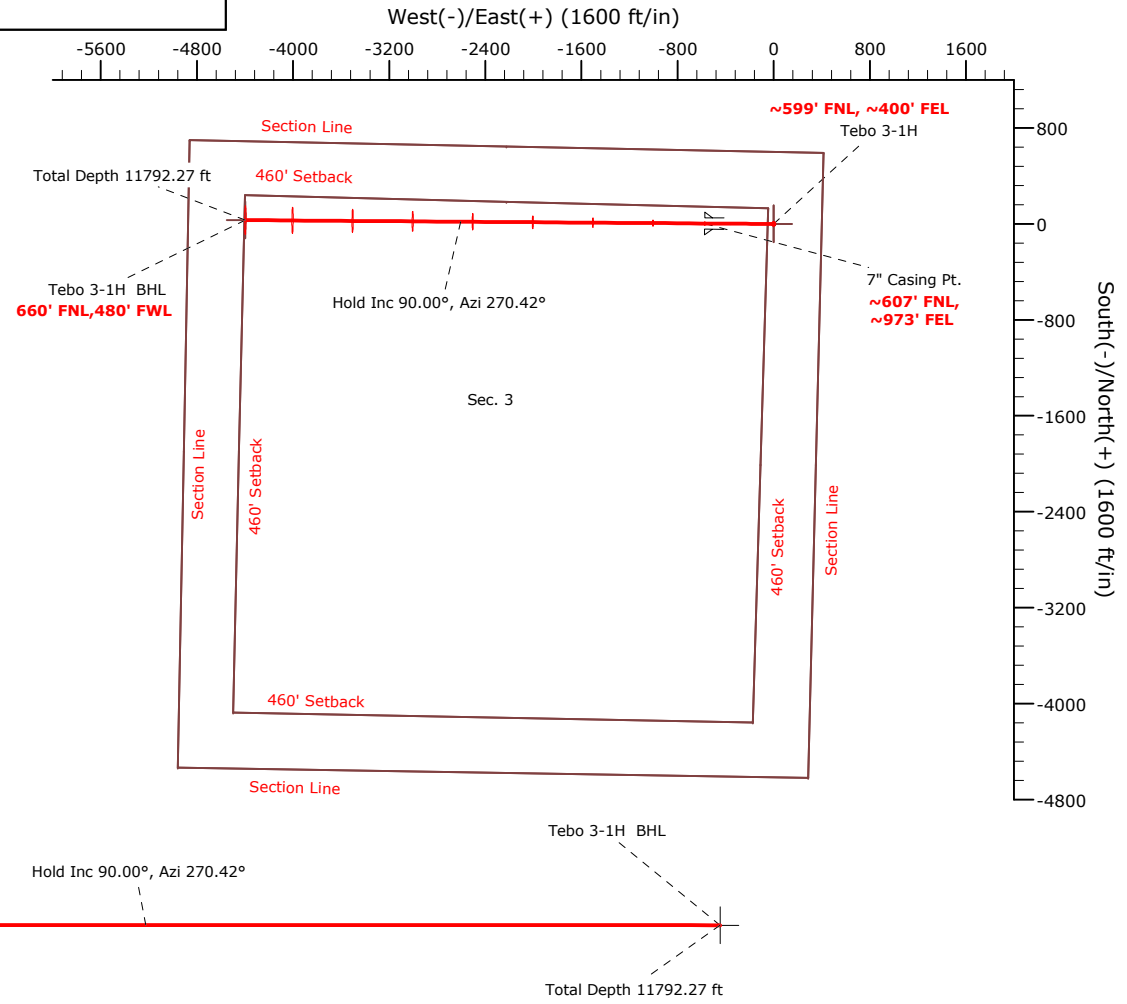
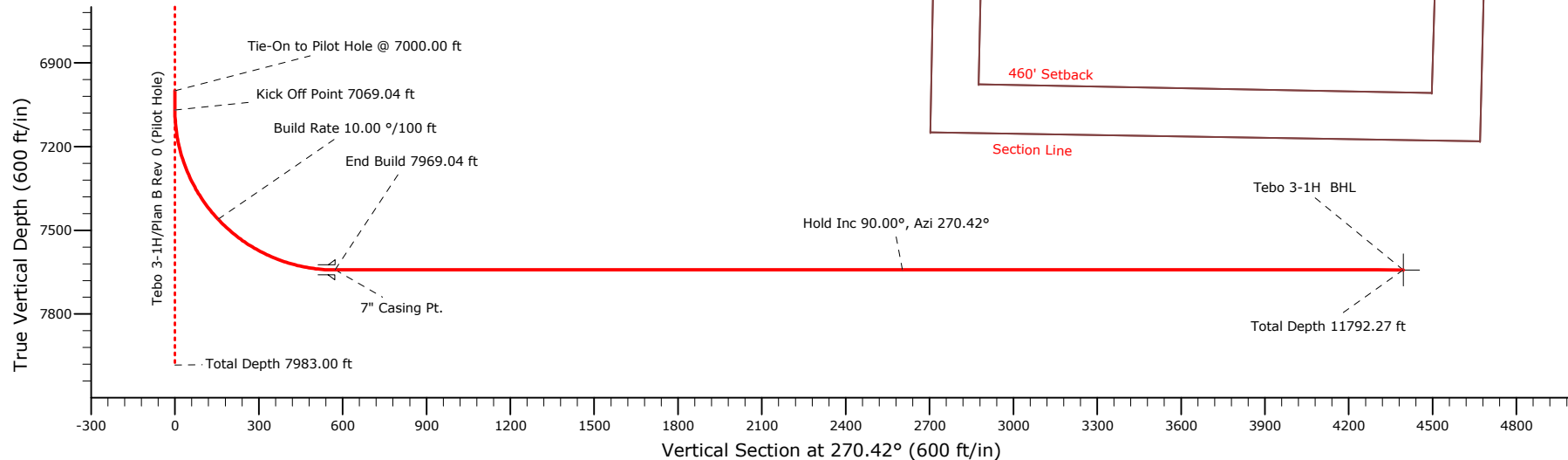
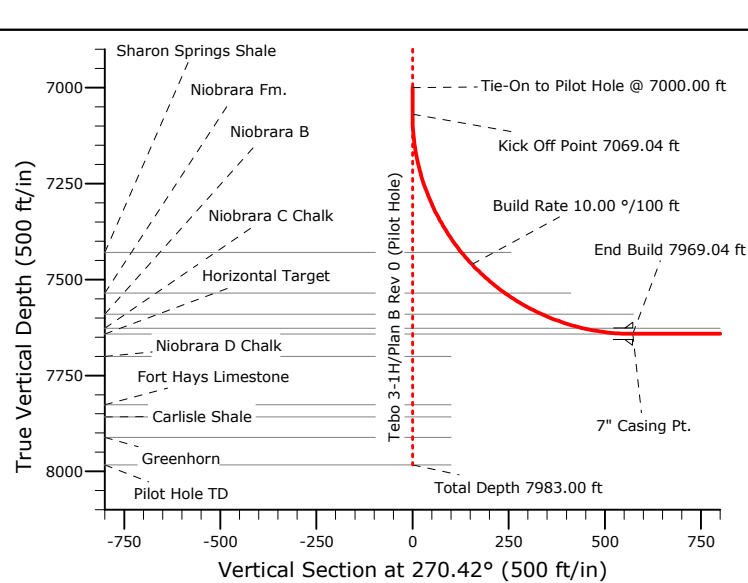
Date: _____

Reviewed: _____

Date: _____

Approved: _____

Date: _____



Plan Report for Tebo 3-1H - Plan B 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 (°)
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tie-On to Pilot Hole @ 7000.00 ft										
7,069.04	0.00	0.00	7,069.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kick Off Point 7069.04 ft										
7,100.00	3.10	270.42	7,099.98	0.01	-0.84	0.84	10.00	10.00	0.00	270.42
7,200.00	13.10	270.42	7,198.86	0.11	-14.90	14.90	10.00	10.00	0.00	0.00
7,300.00	23.10	270.42	7,293.80	0.34	-45.92	45.92	10.00	10.00	0.00	0.00
7,400.00	33.10	270.42	7,381.90	0.68	-92.96	92.96	10.00	10.00	0.00	0.00
7,458.25	38.92	270.42	7,429.00	0.93	-127.19	127.19	10.00	10.00	0.00	0.00
Sharon Springs Shale										
7,500.00	43.10	270.42	7,460.50	1.13	-154.57	154.58	10.00	10.00	0.00	0.00
Build Rate 10.00 °/100 ft										
7,600.00	53.10	270.42	7,527.20	1.67	-228.90	228.91	10.00	10.00	0.00	0.00
7,613.19	54.42	270.42	7,535.00	1.75	-239.54	239.55	10.00	10.00	0.00	0.00
Niobrara Fm.										
7,700.00	63.10	270.42	7,579.98	2.29	-313.69	313.70	10.00	10.00	0.00	0.00
7,723.05	65.40	270.42	7,590.00	2.44	-334.45	334.46	10.00	10.00	0.00	0.00
Niobrara B										
7,800.00	73.10	270.42	7,617.24	2.96	-406.35	406.36	10.00	10.00	0.00	0.00
7,837.66	76.86	270.42	7,627.00	3.23	-442.71	442.72	10.00	10.00	0.00	0.00
Niobrara C Chalk										
7,900.00	83.10	270.42	7,637.84	3.68	-504.07	504.08	10.00	10.00	0.00	0.00
7,969.04	90.00	270.42	7,642.00	4.18	-572.94	572.96	10.00	10.00	0.00	0.00
End Build 7969.04 ft - Horizontal Target - 7" Casing Pt.										
8,000.00	90.00	270.42	7,642.00	4.41	-603.90	603.92	0.00	0.00	0.00	0.00
8,100.00	90.00	270.42	7,642.00	5.14	-703.90	703.92	0.00	0.00	0.00	0.00
8,200.00	90.00	270.42	7,642.00	5.87	-803.90	803.92	0.00	0.00	0.00	0.00
8,300.00	90.00	270.42	7,642.00	6.59	-903.89	903.92	0.00	0.00	0.00	0.00
8,400.00	90.00	270.42	7,642.00	7.32	-1,003.89	1,003.92	0.00	0.00	0.00	0.00
8,500.00	90.00	270.42	7,642.00	8.05	-1,103.89	1,103.92	0.00	0.00	0.00	0.00
8,600.00	90.00	270.42	7,642.00	8.78	-1,203.89	1,203.92	0.00	0.00	0.00	0.00
8,700.00	90.00	270.42	7,642.00	9.51	-1,303.88	1,303.92	0.00	0.00	0.00	0.00
8,800.00	90.00	270.42	7,642.00	10.24	-1,403.88	1,403.92	0.00	0.00	0.00	0.00
8,900.00	90.00	270.42	7,642.00	10.97	-1,503.88	1,503.92	0.00	0.00	0.00	0.00
9,000.00	90.00	270.42	7,642.00	11.70	-1,603.88	1,603.92	0.00	0.00	0.00	0.00
9,100.00	90.00	270.42	7,642.00	12.43	-1,703.87	1,703.92	0.00	0.00	0.00	0.00
9,200.00	90.00	270.42	7,642.00	13.16	-1,803.87	1,803.92	0.00	0.00	0.00	0.00
9,300.00	90.00	270.42	7,642.00	13.89	-1,903.87	1,903.92	0.00	0.00	0.00	0.00
9,400.00	90.00	270.42	7,642.00	14.62	-2,003.86	2,003.92	0.00	0.00	0.00	0.00
9,500.00	90.00	270.42	7,642.00	15.35	-2,103.86	2,103.92	0.00	0.00	0.00	0.00
9,600.00	90.00	270.42	7,642.00	16.08	-2,203.86	2,203.92	0.00	0.00	0.00	0.00
9,700.00	90.00	270.42	7,642.00	16.81	-2,303.86	2,303.92	0.00	0.00	0.00	0.00
9,800.00	90.00	270.42	7,642.00	17.54	-2,403.85	2,403.92	0.00	0.00	0.00	0.00
9,900.00	90.00	270.42	7,642.00	18.27	-2,503.85	2,503.92	0.00	0.00	0.00	0.00
10,000.00	90.00	270.42	7,642.00	19.00	-2,603.85	2,603.92	0.00	0.00	0.00	0.00
Hold Inc 90.00°, Azi 270.42°										
10,100.00	90.00	270.42	7,642.00	19.73	-2,703.85	2,703.92	0.00	0.00	0.00	0.00
10,200.00	90.00	270.42	7,642.00	20.46	-2,803.84	2,803.92	0.00	0.00	0.00	0.00
10,300.00	90.00	270.42	7,642.00	21.19	-2,903.84	2,903.92	0.00	0.00	0.00	0.00
10,400.00	90.00	270.42	7,642.00	21.92	-3,003.84	3,003.92	0.00	0.00	0.00	0.00
10,500.00	90.00	270.42	7,642.00	22.64	-3,103.84	3,103.92	0.00	0.00	0.00	0.00
10,600.00	90.00	270.42	7,642.00	23.37	-3,203.83	3,203.92	0.00	0.00	0.00	0.00
10,700.00	90.00	270.42	7,642.00	24.10	-3,303.83	3,303.92	0.00	0.00	0.00	0.00
10,800.00	90.00	270.42	7,642.00	24.83	-3,403.83	3,403.92	0.00	0.00	0.00	0.00
10,900.00	90.00	270.42	7,642.00	25.56	-3,503.82	3,503.92	0.00	0.00	0.00	0.00
11,000.00	90.00	270.42	7,642.00	26.29	-3,603.82	3,603.92	0.00	0.00	0.00	0.00
11,100.00	90.00	270.42	7,642.00	27.02	-3,703.82	3,703.92	0.00	0.00	0.00	0.00
11,200.00	90.00	270.42	7,642.00	27.75	-3,803.82	3,803.92	0.00	0.00	0.00	0.00

Plan Report for Tebo 3-1H - Plan B 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 (°)
11,300.00	90.00	270.42	7,642.00	28.48	-3,903.81	3,903.92	0.00	0.00	0.00	0.00
11,400.00	90.00	270.42	7,642.00	29.21	-4,003.81	4,003.92	0.00	0.00	0.00	0.00
11,500.00	90.00	270.42	7,642.00	29.94	-4,103.81	4,103.92	0.00	0.00	0.00	0.00
11,600.00	90.00	270.42	7,642.00	30.67	-4,203.81	4,203.92	0.00	0.00	0.00	0.00
11,700.00	90.00	270.42	7,642.00	31.40	-4,303.80	4,303.92	0.00	0.00	0.00	0.00
11,792.27	90.00	270.42	7,642.00	32.07	-4,396.07	4,396.18	0.00	0.00	0.00	0.00
Total Depth 11792.27 ft - Tebo 3-1H BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,000.00	7,000.00	0.00	0.00	Tie-On to Pilot Hole @ 7000.00 ft
7,069.04	7,069.04	0.00	0.00	Kick Off Point 7069.04 ft
7,500.00	7,460.50	1.13	-154.57	Build Rate 10.00 °/100 ft
7,969.04	7,642.00	4.18	-572.94	End Build 7969.04 ft
10,000.00	7,642.00	19.00	-2,603.85	Hold Inc 90.00°, Azi 270.42°
11,792.27	7,642.00	32.07	-4,396.07	Total Depth 11792.27 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Tebo 3-1H BHL	270.42	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
7,000.00	11,792.27	Plan B Rev 0 (Lateral)	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,969.04	7,642.00	7" Casing Pt.	7	8-3/4

Plan Report for Tebo 3-1H - Plan B Rev 0 (Lateral)

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,785.00	Fox Hills Aquifer			
	1,985.00	Pierre Shale			
	3,714.00	(Base Fox Hills)			
	7,700.00	Niobrara D Chalk			
	7,826.00	Fort Hays Limestone			
	7,858.00	Carlisle Shale			
	7,911.00	Greenhorn			
	7,983.00	Pilot Hole TD			
7,458.25	7,429.00	Sharon Springs Shale			
7,613.19	7,535.00	Niobrara Fm.			
7,723.05	7,590.00	Niobrara B			
7,837.66	7,627.00	Niobrara C Chalk			
7,969.04	7,642.00	Horizontal Target			

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Tebo 3-1H SL	0.00	0.00	0.00	Polygon
Tebo 3-1H BHL	7,642.00	32.07	-4,396.07	Point
Tebo 3-1H SB	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 3-T5S-R64W - Tebo 3-1H - Plan B

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 @ 5899.00ft (H&P 280). Northing and Easting are relative to Tebo 3-1H
 Coordinate System is US State Plane 1983, Colorado Central 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° 0' 0.000 E°, Latitude Origin:39° 45' 0.000 N°
 False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99998175
 Grid Coordinates of Well: 1,663,106.19 ft N, 3,273,131.94 ft E
 Geographical Coordinates of Well: 39° 39' 00.07" N, 104° 31' 47.98" W
 Grid Convergence at Surface is: 0.61°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,792.27ft
 the Bottom Hole Displacement is 4,396.18ft in the Direction of 270.42° (True).
 Magnetic Convergence at surface is: -7.90° (31 August 2012, , BGGM2011)

