

Conoco Phillips Company

Arapahoe County, Colorado

Sec. 12-T4S-R64W

Walker 12-1H

Plan A

Plan: Plan A Rev 0 (Lateral)

Sperry Drilling Services

Proposal Report

07 August, 2012

Well Coordinates: 1,685,367.52 N, 3,283,932.62 E (39° 42' 38.90" N, 104° 29' 26.74" W)

Ground Level: 5,712.00 ft

Local Coordinate Origin:

Centered on Well Walker 12-1H

Viewing Datum:

RKB 24 ft @ 5736.00ft (H&P 280)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Version: 2003.16 Build: 431

HALLIBURTON

Conoco Phillips Company

WELL DETAILS: Walker 12-1H

Ground Level: 5712.00 Northing: 1685367.52 Easting: 3283932.62 Latitude: 39° 42' 38.902 N Longitude: 104° 29' 26.740 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	0.00	0.00	
2	6791.04	0.00	0.00	6791.04	0.00	0.00	0.00	0.00	0.00	
3	7691.04	90.00	271.67	7364.00	16.72	-572.71	10.00	271.67	572.96	
4	11664.43	90.00	271.67	7364.00	132.63	-4544.42	0.00	0.00	4546.35	Walker 12-1H BHL

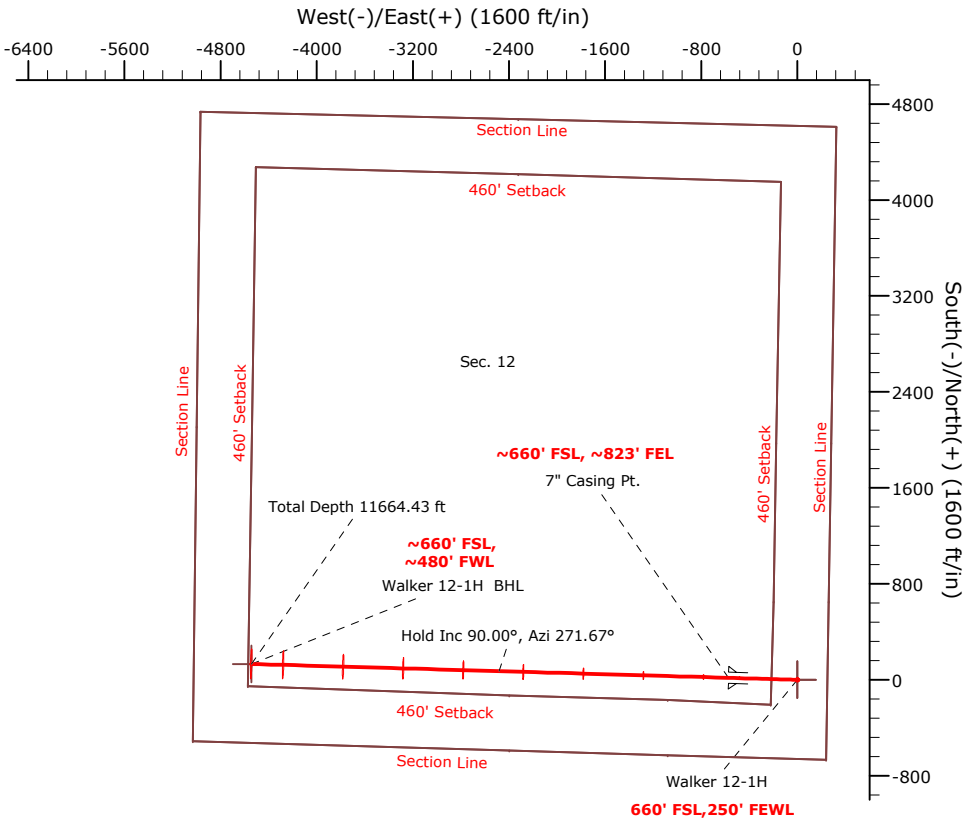
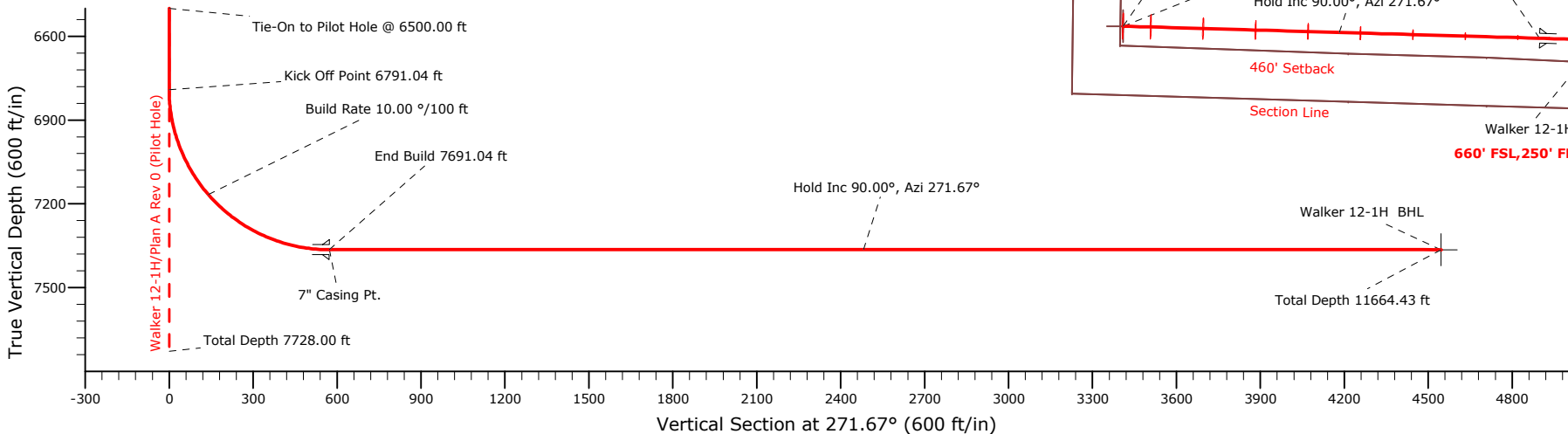
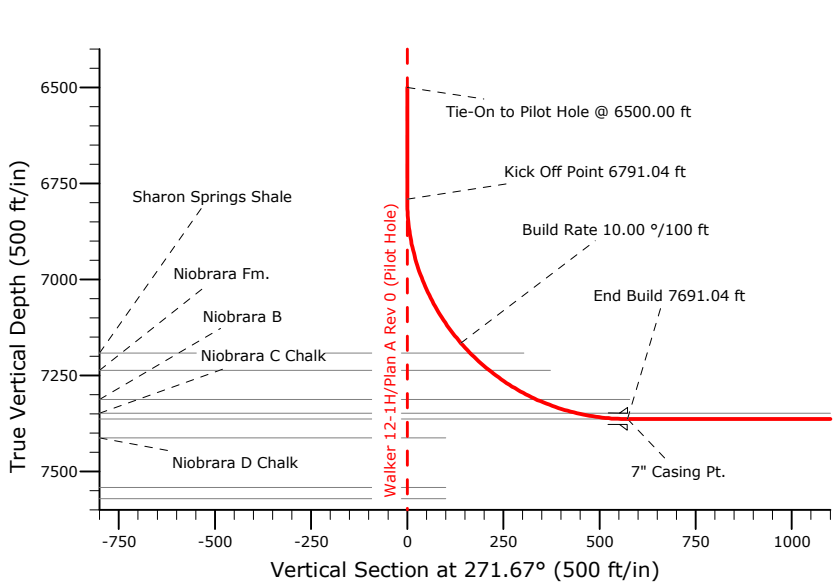
Plan: Plan A rev 0 (Lateral) (Walker 12-1H/Plan A)

Created By: Matthew R. Epp Date: 08-07-2012

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____



Plan Report for Walker 12-1H - 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 Pilot Hole @ 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
6,791.04	0.00	0.00	6,791.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kick Off Point 6791.04 ft										
6,800.00	0.90	271.67	6,800.00	0.00	-0.07	0.07	10.00	10.00	0.00	271.67
6,900.00	10.90	271.67	6,899.34	0.30	-10.32	10.33	10.00	10.00	0.00	0.00
7,000.00	20.90	271.67	6,995.40	1.10	-37.67	37.68	10.00	10.00	0.00	0.00
7,100.00	30.90	271.67	7,085.24	2.37	-81.27	81.30	10.00	10.00	0.00	0.00
7,200.00	40.90	271.67	7,166.15	4.08	-139.80	139.86	10.00	10.00	0.00	0.00
Build Rate 10.00 °/100 ft										
7,235.16	44.41	271.67	7,192.00	4.77	-163.61	163.68	10.00	10.00	0.00	0.00
Sharon Springs Shale										
7,300.00	50.90	271.67	7,235.66	6.17	-211.49	211.58	10.00	10.00	0.00	0.00
7,302.13	51.11	271.67	7,237.00	6.22	-213.14	213.24	10.00	10.00	0.00	0.00
Niobrara Fm.										
7,400.00	60.90	271.67	7,291.66	8.58	-294.15	294.27	10.00	10.00	0.00	0.00
7,447.47	65.64	271.67	7,313.00	9.82	-336.51	336.66	10.00	10.00	0.00	0.00
Niobrara B										
7,500.00	70.90	271.67	7,332.44	11.24	-385.27	385.44	10.00	10.00	0.00	0.00
7,559.66	76.86	271.67	7,349.00	12.92	-442.53	442.72	10.00	10.00	0.00	0.00
Niobrara C Chalk										
7,600.00	80.90	271.67	7,356.78	14.07	-482.10	482.30	10.00	10.00	0.00	0.00
7,691.04	90.00	271.67	7,364.00	16.72	-572.71	572.96	10.00	10.00	0.00	0.00
End Build 7691.04 ft - TARGET HORIZONTAL - 7" Casing Pt.										
7,700.00	90.00	271.67	7,364.00	16.98	-581.67	581.92	0.00	0.00	0.00	0.00
7,800.00	90.00	271.67	7,364.00	19.89	-681.63	681.92	0.00	0.00	0.00	0.00
7,900.00	90.00	271.67	7,364.00	22.81	-781.58	781.92	0.00	0.00	0.00	0.00
8,000.00	90.00	271.67	7,364.00	25.73	-881.54	881.92	0.00	0.00	0.00	0.00
8,100.00	90.00	271.67	7,364.00	28.65	-981.50	981.92	0.00	0.00	0.00	0.00
8,200.00	90.00	271.67	7,364.00	31.56	-1,081.46	1,081.92	0.00	0.00	0.00	0.00
8,300.00	90.00	271.67	7,364.00	34.48	-1,181.41	1,181.92	0.00	0.00	0.00	0.00
8,400.00	90.00	271.67	7,364.00	37.40	-1,281.37	1,281.92	0.00	0.00	0.00	0.00
8,500.00	90.00	271.67	7,364.00	40.32	-1,381.33	1,381.92	0.00	0.00	0.00	0.00
8,600.00	90.00	271.67	7,364.00	43.23	-1,481.29	1,481.92	0.00	0.00	0.00	0.00
8,700.00	90.00	271.67	7,364.00	46.15	-1,581.24	1,581.92	0.00	0.00	0.00	0.00
8,800.00	90.00	271.67	7,364.00	49.07	-1,681.20	1,681.92	0.00	0.00	0.00	0.00
8,900.00	90.00	271.67	7,364.00	51.98	-1,781.16	1,781.92	0.00	0.00	0.00	0.00
9,000.00	90.00	271.67	7,364.00	54.90	-1,881.12	1,881.92	0.00	0.00	0.00	0.00
9,100.00	90.00	271.67	7,364.00	57.82	-1,981.07	1,981.92	0.00	0.00	0.00	0.00
9,200.00	90.00	271.67	7,364.00	60.74	-2,081.03	2,081.92	0.00	0.00	0.00	0.00
9,300.00	90.00	271.67	7,364.00	63.65	-2,180.99	2,181.92	0.00	0.00	0.00	0.00
9,400.00	90.00	271.67	7,364.00	66.57	-2,280.95	2,281.92	0.00	0.00	0.00	0.00
9,500.00	90.00	271.67	7,364.00	69.49	-2,380.90	2,381.92	0.00	0.00	0.00	0.00
9,600.00	90.00	271.67	7,364.00	72.41	-2,480.86	2,481.92	0.00	0.00	0.00	0.00
Hold Inc 90.00°, Azi 271.67°										
9,700.00	90.00	271.67	7,364.00	75.32	-2,580.82	2,581.92	0.00	0.00	0.00	0.00
9,800.00	90.00	271.67	7,364.00	78.24	-2,680.78	2,681.92	0.00	0.00	0.00	0.00
9,900.00	90.00	271.67	7,364.00	81.16	-2,780.73	2,781.92	0.00	0.00	0.00	0.00
10,000.00	90.00	271.67	7,364.00	84.08	-2,880.69	2,881.92	0.00	0.00	0.00	0.00
10,100.00	90.00	271.67	7,364.00	86.99	-2,980.65	2,981.92	0.00	0.00	0.00	0.00
10,200.00	90.00	271.67	7,364.00	89.91	-3,080.61	3,081.92	0.00	0.00	0.00	0.00
10,300.00	90.00	271.67	7,364.00	92.83	-3,180.56	3,181.92	0.00	0.00	0.00	0.00
10,400.00	90.00	271.67	7,364.00	95.74	-3,280.52	3,281.92	0.00	0.00	0.00	0.00
10,500.00	90.00	271.67	7,364.00	98.66	-3,380.48	3,381.92	0.00	0.00	0.00	0.00
10,600.00	90.00	271.67	7,364.00	101.58	-3,480.44	3,481.92	0.00	0.00	0.00	0.00
10,700.00	90.00	271.67	7,364.00	104.50	-3,580.39	3,581.92	0.00	0.00	0.00	0.00

Plan Report for Walker 12-1H - 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 (°)
10,800.00	90.00	271.67	7,364.00	107.41	-3,680.35	3,681.92	0.00	0.00	0.00	0.00
10,900.00	90.00	271.67	7,364.00	110.33	-3,780.31	3,781.92	0.00	0.00	0.00	0.00
11,000.00	90.00	271.67	7,364.00	113.25	-3,880.27	3,881.92	0.00	0.00	0.00	0.00
11,100.00	90.00	271.67	7,364.00	116.17	-3,980.22	3,981.92	0.00	0.00	0.00	0.00
11,200.00	90.00	271.67	7,364.00	119.08	-4,080.18	4,081.92	0.00	0.00	0.00	0.00
11,300.00	90.00	271.67	7,364.00	122.00	-4,180.14	4,181.92	0.00	0.00	0.00	0.00
11,400.00	90.00	271.67	7,364.00	124.92	-4,280.10	4,281.92	0.00	0.00	0.00	0.00
11,500.00	90.00	271.67	7,364.00	127.84	-4,380.05	4,381.92	0.00	0.00	0.00	0.00
11,600.00	90.00	271.67	7,364.00	130.75	-4,480.01	4,481.92	0.00	0.00	0.00	0.00
11,664.43	90.00	271.67	7,364.00	132.63	-4,544.42	4,546.35	0.00	0.00	0.00	0.00

Total Depth 11664.43 ft - Walker 12-1H BHL

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 Pilot Hole @ 6500.00 ft
6,791.04	6,791.04	0.00	0.00	Kick Off Point 6791.04 ft
7,200.00	7,166.15	4.08	-139.80	Build Rate 10.00 °/100 ft
7,691.04	7,364.00	16.72	-572.71	End Build 7691.04 ft
9,600.00	7,364.00	72.41	-2,480.86	Hold Inc 90.00°, Azi 271.67°
11,664.43	7,364.00	132.63	-4,544.42	Total Depth 11664.43 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Walker 12-1H BHL	271.67	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
6,500.00	11,664.43	Plan A Rev 0 (Lateral)	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,691.04	7,364.00	7" Casing Pt.	7	8-3/4

Plan Report for Walker 12-1H - Plan A Rev 0 (Lateral)

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,695.00	Fox Hills Aquifer			
	1,751.00	Pierre Shale			
	1,950.00	(Base Fox Hills)			
	7,413.00	Niobrara D Chalk			
	7,542.00	Fort Hays Limestone			
	7,571.00	Carlisle Shale			
	7,628.00	Greenhorn			
	7,728.00	Pilot Hole TD			
7,235.16	7,192.00	Sharon Springs Shale			
7,302.13	7,237.00	Niobrara Fm.			
7,447.47	7,313.00	Niobrara B			
7,559.66	7,349.00	Niobrara C Chalk			
7,691.04	7,364.00	TARGET HORIZONTAL			

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Walker 12-1H SB	0.00	0.00	0.00	Polygon
Walker 12-1H SL	0.00	0.00	0.00	Polygon
Walker 12-1H BHL	7,364.00	132.63	-4,544.42	Point

North Reference Sheet for Sec. 12-T4S-R64W - Walker 12-1H - 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 @ 5736.00ft (H&P 280). Northing and Easting are relative to Walker 12-1H
 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: 0.99999248
 Grid Coordinates of Well: 1,685,367.52 ft N, 3,283,932.62 ft E
 Geographical Coordinates of Well: 39° 42' 38.90" N, 104° 29' 26.74" W
 Grid Convergence at Surface is: 0.64°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,664.43ft
 the Bottom Hole Displacement is 4,546.35ft in the Direction of 271.67° (True).
 Magnetic Convergence at surface is: -7.87° (6 August 2012, ,BGGM2011)

