

Site: Sec. 29-T4S-R64W
Well: Tebo 29-1H

Wellbore: Plan D
Design: Plan D Rev 0 (Lateral)

WELL DETAILS: T000 29-1H

Ground Level: 5856.00

Northing: 1669345.08

Fasting: 3262253.06

Latitude: 39° 40' 2.849 N Longitude: 104° 34' 6.110 W

Plan: Plan D Rev 0 (Lateral) (Tebco 29-1H/Plan D)

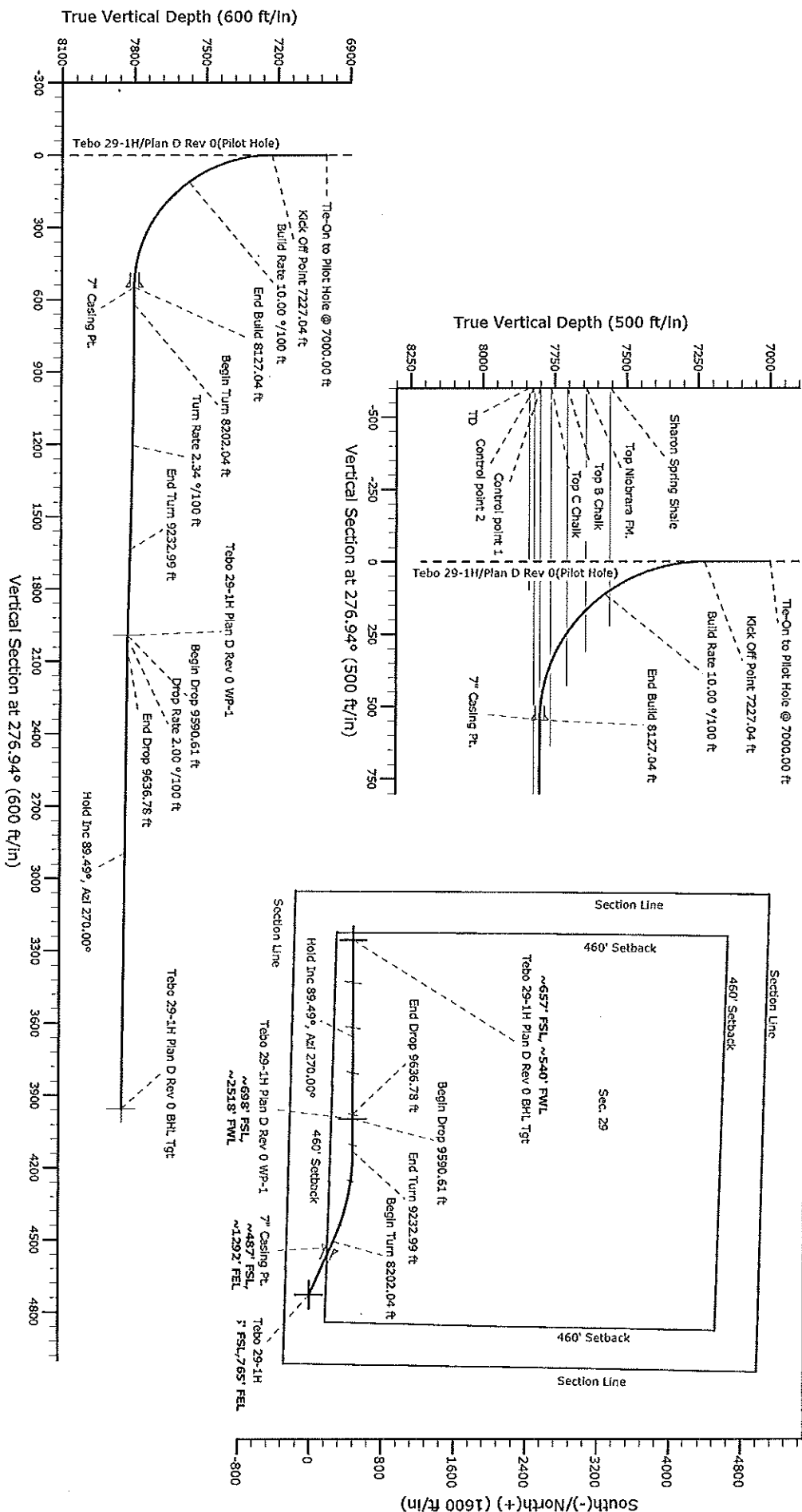
Created By: Matthew R. Epp Date: 05-23-2012

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Sec	MD	Asi	TVD	+N-S	+E-W	DLgr	Tf=0	Vloc	Target
1	7000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	72827.04	0.00	72827.04	0.00	0.00	0.00	0.00	0.00	
3	8127.04	90.00	7800.00	293.84	-523.07	10.00	294.09	5.7249	
4	8282.04	90.00	7830.00	285.45	-581.54	0.00	0.00	6.15	
5	9630.78	88.57	7713.07	477.89	-1582.26	2.34	-93.50	1.638138	Tabo 28-1H Plan D Row 0 W/P-1
6	9593.61	88.57	7822.00	477.59	-1945.95	0.00	0.00	1.988226	
7	9593.61	88.49	7720.00	477.59	-1945.95	2.00	0.00	3.066304	Tabo 28-1H Plan D Row 0 W/P-1
8	15588.27	88.49	7838.90	477.39	-3927.35	0.00	0.00	3.989304	Tabo 28-1H Plan D Row 0 B/L Tgt



Conoco Phillips Company

Arapahoe County, Colorado

Sec. 29-T4S-R64W

Tebo 29-1H

Plan D

Plan: Plan D Rev 0(Lateral)

Sperry Drilling Services Proposal Report

23 May, 2012

Well Coordinates: 1,669,345.08 N, 3,262,263.06 E (39° 40' 02.85" N, 104° 34' 06.11" W)
Ground Level: 5,856.00 ft

Local Coordinate Origin:	Centered on Well Tebo 29-1H
Viewing Datum:	RKB 24 ft @ 5880.00ft (H&P 280)
TVDs to System:	N
North Reference:	True
Unit System:	API - US Survey Feet - Custom

Version: 2003.16 Build: 43I

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Plan Report for Tebo 29-1H - Plan D 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										
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,227.04	0.00	0.00	7,227.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kick Off Point 7227.04 ft										
7,300.00	7.30	294.09	7,299.80	1.89	-4.24	4.43	10.00	10.00	0.00	294.09
7,400.00	17.30	294.09	7,397.39	10.57	-23.65	24.76	10.00	10.00	0.00	0.00
7,500.00	27.30	294.09	7,489.79	26.04	-58.24	60.96	10.00	10.00	0.00	0.00
7,578.66	35.16	294.09	7,557.00	42.67	-95.44	98.90	10.00	10.00	0.00	0.00
Sharon Spring Shale										
7,600.00	37.30	294.09	7,574.21	47.82	-106.96	111.95	10.00	10.00	0.00	0.00
Build Rate 10.00 °/100 ft										
7,688.21	46.12	294.09	7,640.00	71.74	-160.48	167.97	10.00	10.00	0.00	0.00
Top Niobrara FM.										
7,700.00	47.30	294.09	7,648.09	75.25	-168.32	176.18	10.00	10.00	0.00	0.00
7,794.18	56.71	294.09	7,706.00	105.51	-236.00	247.02	10.00	10.00	0.00	0.00
Top B Chalk										
7,800.00	57.30	294.09	7,709.17	107.50	-240.45	251.68	10.00	10.00	0.00	0.00
7,900.00	67.30	294.09	7,755.60	143.59	-321.18	336.17	10.00	10.00	0.00	0.00
7,920.01	69.30	294.09	7,763.00	151.17	-338.15	353.94	10.00	10.00	0.00	0.00
Top C Chalk										
8,000.00	77.30	294.09	7,785.97	182.42	-408.04	427.09	10.00	10.00	0.00	0.00
8,100.00	87.30	294.09	7,799.36	222.81	-498.39	521.66	10.00	10.00	0.00	0.00
8,127.04	90.00	294.09	7,800.00	233.84	-523.07	547.49	10.00	10.00	0.00	0.00
End Build 8127.04 ft - Control point 1 - 7" Casing Pt.										
8,200.00	90.00	294.09	7,800.00	263.62	-589.67	617.20	0.00	0.00	0.00	0.00
8,202.04	90.00	294.09	7,800.00	264.45	-591.54	619.15	0.00	0.00	0.00	0.00
Begin Turn 8202.04 ft										
8,300.00	89.86	291.80	7,800.12	302.64	-681.74	713.31	2.34	-0.14	-2.34	-93.50
8,400.00	89.72	289.46	7,800.49	337.87	-775.32	810.46	2.34	-0.14	-2.34	-93.50
8,500.00	89.57	287.13	7,801.10	369.26	-870.26	908.49	2.34	-0.14	-2.34	-93.49
8,600.00	89.43	284.79	7,801.97	396.75	-966.39	1,007.25	2.34	-0.14	-2.34	-93.48
8,700.00	89.29	282.45	7,803.08	420.30	-1,063.57	1,106.55	2.34	-0.14	-2.34	-93.46
8,800.00	89.15	280.12	7,804.44	439.87	-1,161.62	1,206.25	2.34	-0.14	-2.34	-93.43
Turn Rate 2.34 °/100 ft										
8,900.00	89.02	277.78	7,806.04	455.42	-1,260.38	1,306.17	2.34	-0.14	-2.34	-93.40
9,000.00	88.88	275.44	7,807.87	466.93	-1,359.69	1,406.14	2.34	-0.14	-2.34	-93.36
9,100.00	88.74	273.11	7,809.95	474.39	-1,459.38	1,506.01	2.34	-0.13	-2.34	-93.32
9,200.00	88.61	270.77	7,812.26	477.77	-1,559.29	1,605.59	2.34	-0.13	-2.34	-93.27
9,232.99	88.57	270.00	7,813.07	477.99	-1,592.27	1,638.36	2.34	-0.13	-2.34	-93.22
End Turn 9232.99 ft										
9,300.00	88.57	270.00	7,814.74	477.99	-1,659.26	1,704.86	0.00	0.00	0.00	-93.20
9,400.00	88.57	270.00	7,817.24	477.99	-1,759.23	1,804.09	0.00	0.00	0.00	0.00
9,500.00	88.57	270.00	7,819.74	477.99	-1,859.20	1,903.33	0.00	0.00	0.00	0.00
9,590.61	88.57	270.00	7,822.00	477.99	-1,949.78	1,993.25	0.00	0.00	0.00	0.00
Begin Drop 9590.61 ft - Control point 2 - Tebo 29-1H Plan D Rev 0 WP-1										
9,600.00	88.76	270.00	7,822.22	477.99	-1,959.17	2,002.57	2.00	2.00	0.00	0.04
Drop Rate 2.00 °/100 ft										
9,636.78	89.49	270.00	7,822.78	477.99	-1,995.94	2,039.07	2.00	2.00	0.00	0.04
End Drop 9636.78 ft										
9,700.00	89.49	270.00	7,823.34	477.99	-2,059.16	2,101.83	0.00	0.00	0.00	0.04
9,800.00	89.49	270.00	7,824.23	477.99	-2,159.16	2,201.09	0.00	0.00	0.00	0.00
9,900.00	89.49	270.00	7,825.11	477.99	-2,259.15	2,300.35	0.00	0.00	0.00	0.00
10,000.00	89.49	270.00	7,826.00	477.99	-2,359.15	2,399.62	0.00	0.00	0.00	0.00
10,100.00	89.49	270.00	7,826.89	477.99	-2,459.14	2,498.88	0.00	0.00	0.00	0.00
10,200.00	89.49	270.00	7,827.77	477.99	-2,559.14	2,598.14	0.00	0.00	0.00	0.00

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Plan Report for Tebo 29-1H - Plan D 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 (°)
10,300.00	89.49	270.00	7,828.66	477.99	-2,659.14	2,697.41	0.00	0.00	0.00	0.00
10,400.00	89.49	270.00	7,829.55	477.99	-2,759.13	2,796.67	0.00	0.00	0.00	0.00
10,500.00	89.49	270.00	7,830.43	477.99	-2,859.13	2,895.93	0.00	0.00	0.00	0.00
Hold Inc 89.49°, Azi 270.00°										
10,600.00	89.49	270.00	7,831.32	477.99	-2,959.13	2,995.20	0.00	0.00	0.00	0.00
10,700.00	89.49	270.00	7,832.20	477.99	-3,059.12	3,094.46	0.00	0.00	0.00	0.00
10,800.00	89.49	270.00	7,833.09	477.99	-3,159.12	3,193.73	0.00	0.00	0.00	0.00
10,900.00	89.49	270.00	7,833.98	477.99	-3,259.11	3,292.99	0.00	0.00	0.00	0.00
11,000.00	89.49	270.00	7,834.86	477.99	-3,359.11	3,392.25	0.00	0.00	0.00	0.00
11,100.00	89.49	270.00	7,835.75	477.99	-3,459.11	3,491.52	0.00	0.00	0.00	0.00
11,200.00	89.49	270.00	7,836.64	477.99	-3,559.10	3,590.78	0.00	0.00	0.00	0.00
11,300.00	89.49	270.00	7,837.52	477.99	-3,659.10	3,690.04	0.00	0.00	0.00	0.00
11,400.00	89.49	270.00	7,838.41	477.99	-3,759.09	3,789.31	0.00	0.00	0.00	0.00
11,500.00	89.49	270.00	7,839.29	477.99	-3,859.09	3,888.57	0.00	0.00	0.00	0.00
11,568.27	89.49	270.00	7,839.90	477.99	-3,927.36	3,956.34	0.00	0.00	0.00	0.00
Total Depth 11568.27 ft - Tebo 29-1H Plan D Rev 0 BHL Tgt										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
7,000.00	7,000.00	0.00	0.00	Tie-On to Pilot Hole @ 7000.00 ft
7,227.04	7,227.04	0.00	0.00	Kick Off Point 7227.04 ft
7,600.00	7,574.21	47.82	-106.96	Build Rate 10.00 °/100 ft
8,127.04	7,800.00	233.84	-523.07	End Build 8127.04 ft
8,202.04	7,800.00	264.45	-591.54	Begin Turn 8202.04 ft
8,800.00	7,804.44	439.87	-1,161.62	Turn Rate 2.34 °/100 ft
9,232.99	7,813.07	477.99	-1,592.27	End Turn 9232.99 ft
9,590.61	7,822.00	477.99	-1,949.78	Begin Drop 9590.61 ft
9,600.00	7,822.22	477.99	-1,959.17	Drop Rate 2.00 °/100 ft
9,636.78	7,822.78	477.99	-1,995.94	End Drop 9636.78 ft
10,500.00	7,830.43	477.99	-2,859.13	Hold Inc 89.49°, Azi 270.00°
11,568.27	7,839.90	477.99	-3,927.36	Total Depth 11568.27 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Tebo 29-1H Plan D Rev 0 BHL Tgt	276.94	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
7,000.00	11,567.96	Plan D Rev 0(Lateral)	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
8,127.04	7,800.00	7" Casing Pt.	7	8-3/4

HALLIBURTON**Plan Report for Tebo 29-1H - Plan D Rev 0(Lateral)****Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,669.00	Fox Hills Aquifer			
	1,902.00	Pierre Shale (Base Fox Hills)			
	7,839.93	TD			
7,578.66	7,557.00	Sharon Spring Shale			
7,688.21	7,640.00	Top Niobrara FM.			
7,794.18	7,706.00	Top B Chalk			
7,920.01	7,763.00	Top C Chalk			
8,127.04	7,800.00	Control point 1			
9,590.61	7,822.00	Control point 2			

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Tebo 29-1H SB	0.00	0.00	0.00	Polygon
Tebo 29-1H SL	0.00	0.00	0.00	Polygon
Tebo 29-1H Plan D Rev 0 BHL Tgt	7,839.90	477.99	-3,927.36	Point
Tebo 29-1H Plan D Rev 0 WP-1	7,822.00	477.99	-1,949.78	Point

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North Reference Sheet for Sec. 29-T4S-R64W - Tebo 29-1H - Plan D

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 @ 5880.00ft (H&P 280). Northing and Easting are relative to Tebo 29-1H
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: 0.99998471

Grid Coordinates of Well: 1,669,345.08 ft N, 3,262,263.06 ft E
Geographical Coordinates of Well: 39° 40' 02.85" N, 104° 34' 06.11" W
Grid Convergence at Surface is: 0.59°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,568.27ft
the Bottom Hole Displacement is 3,956.34ft in the Direction of 276.94° (True).

Magnetic Convergence at surface is: -7.98° (22 May 2012, , BGGM2011)

