

Noble Energy

Weld County, CO

Sec. 26-T11N-R61W

Cox PC GK26-99HZ

Plan #1

Plan: Plan #1 Proposal

Sperry Drilling Services Proposal Report

05 May, 2010

Well Coordinates: 1,569,410.44 N, 3,369,033.56 E (40° 53' 19.61" N, 104° 09' 55.08" W)

Ground Level: 5,122.00 ft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

Centered on Well Cox PC GK26-99HZ

RKB 24' @ 5146.00ft (Original Well Elev)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Plan Report for Cox PC GK26-99HZ - Plan #1 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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Plan Report for Cox PC GK26-99HZ - Plan #1 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 (°)
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,029.87	0.00	0.00	6,029.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kickoff at 6029.87ft										
6,100.00	5.61	313.20	6,099.89	2.35	-2.50	3.43	8.00	8.00	0.00	313.20
6,200.00	13.61	313.20	6,198.40	13.77	-14.66	20.11	8.00	8.00	0.00	0.00
6,300.00	21.61	313.20	6,293.64	34.46	-36.70	50.34	8.00	8.00	0.00	0.00
6,400.00	29.61	313.20	6,383.74	64.03	-68.18	93.53	8.00	8.00	0.00	0.00
6,500.00	37.61	313.20	6,466.96	101.89	-108.50	148.84	8.00	8.00	0.00	0.00
6,550.00	41.61	313.20	6,505.47	123.71	-131.73	180.71	8.00	8.00	0.00	0.00
Build Rate = 8.00°/100ft										
6,600.00	45.61	313.20	6,541.66	147.31	-156.87	215.19	8.00	8.00	0.00	0.00
6,700.00	53.61	313.20	6,606.41	199.41	-212.35	291.30	8.00	8.00	0.00	0.00
6,712.13	54.58	313.20	6,613.52	206.13	-219.51	301.12	8.00	8.00	0.00	0.00
Niobrara										
6,729.91	56.00	313.20	6,623.65	216.14	-230.16	315.74	8.00	8.00	0.00	0.00
Niobrara A										
6,748.38	57.48	313.20	6,633.77	226.71	-241.42	331.18	8.00	8.00	0.00	0.00
Niobrara A Base										
6,800.00	61.61	313.20	6,659.93	257.16	-273.85	375.67	8.00	8.00	0.00	0.00
6,900.00	69.61	313.20	6,701.19	319.46	-340.19	466.67	8.00	8.00	0.00	0.00
6,987.55	76.61	313.20	6,726.61	376.77	-401.22	550.40	8.00	8.00	0.00	0.00
Niobrara B										
7,000.00	77.61	313.20	6,729.39	385.08	-410.07	562.53	8.00	8.00	0.00	0.00
7,092.37	85.00	313.20	6,743.34	447.54	-476.58	653.78	8.00	8.00	0.00	0.00
End Build at 7092.37ft - 7" Casing Pt.										
7,094.09	85.00	313.20	6,743.49	448.71	-477.83	655.49	0.00	0.00	0.00	0.00
Nio B Tgt top										
7,100.00	85.00	313.20	6,744.01	452.74	-482.12	661.38	0.00	0.00	0.00	0.00
7,130.00	85.00	313.20	6,746.62	473.20	-503.91	691.26	0.00	0.00	0.00	0.00
Hold Angle at 85.00										
7,167.37	85.00	313.20	6,749.88	498.69	-531.05	728.49	0.00	0.00	0.00	0.00
Kickoff at 7167.37ft										
7,195.00	87.21	313.20	6,751.76	517.56	-551.14	756.06	8.00	8.00	0.00	0.00
Build Rate = 8.00°/100ft										
7,200.00	87.61	313.20	6,751.98	520.97	-554.78	761.05	8.00	8.00	0.00	0.00
7,221.81	89.35	313.20	6,752.56	535.90	-570.67	782.85	8.00	8.00	0.00	0.00
Nio B Target										
7,223.87	89.52	313.20	6,752.58	537.31	-572.18	784.91	8.00	8.00	0.00	0.00
End Build at 7223.87ft										
7,224.34	89.52	313.20	6,752.58	537.63	-572.52	785.38	1.00	0.97	0.26	14.79
7,300.00	89.52	313.20	6,753.21	589.42	-627.67	861.04	0.00	0.00	0.00	0.00
7,400.00	89.52	313.20	6,754.04	657.88	-700.56	961.04	0.00	0.00	0.00	0.00
7,500.00	89.52	313.20	6,754.87	726.33	-773.46	1,061.03	0.00	0.00	0.00	0.00
7,600.00	89.52	313.20	6,755.70	794.78	-846.35	1,161.03	0.00	0.00	0.00	0.00
7,700.00	89.52	313.20	6,756.53	863.24	-919.24	1,261.03	0.00	0.00	0.00	0.00
7,800.00	89.52	313.20	6,757.36	931.69	-992.13	1,361.02	0.00	0.00	0.00	0.00
7,900.00	89.52	313.20	6,758.19	1,000.15	-1,065.03	1,461.02	0.00	0.00	0.00	0.00
8,000.00	89.52	313.20	6,759.02	1,068.60	-1,137.92	1,561.02	0.00	0.00	0.00	0.00
8,100.00	89.52	313.20	6,759.85	1,137.05	-1,210.81	1,661.01	0.00	0.00	0.00	0.00
8,200.00	89.52	313.20	6,760.68	1,205.51	-1,283.71	1,761.01	0.00	0.00	0.00	0.00
8,300.00	89.52	313.20	6,761.51	1,273.96	-1,356.60	1,861.00	0.00	0.00	0.00	0.00
8,400.00	89.52	313.20	6,762.34	1,342.42	-1,429.49	1,961.00	0.00	0.00	0.00	0.00
8,500.00	89.52	313.20	6,763.17	1,410.87	-1,502.38	2,061.00	0.00	0.00	0.00	0.00
8,600.00	89.52	313.20	6,764.00	1,479.32	-1,575.28	2,160.99	0.00	0.00	0.00	0.00
8,700.00	89.52	313.20	6,764.83	1,547.78	-1,648.17	2,260.99	0.00	0.00	0.00	0.00
8,800.00	89.52	313.20	6,765.66	1,616.23	-1,721.06	2,360.99	0.00	0.00	0.00	0.00
8,900.00	89.52	313.20	6,766.49	1,684.69	-1,793.96	2,460.98	0.00	0.00	0.00	0.00

Plan Report for Cox PC GK26-99HZ - Plan #1 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 (°)
9,000.00	89.52	313.20	6,767.32	1,753.14	-1,866.85	2,560.98	0.00	0.00	0.00	0.00
9,100.00	89.52	313.20	6,768.15	1,821.59	-1,939.74	2,660.98	0.00	0.00	0.00	0.00
9,200.00	89.52	313.20	6,768.98	1,890.05	-2,012.63	2,760.97	0.00	0.00	0.00	0.00
9,300.00	89.52	313.20	6,769.81	1,958.50	-2,085.53	2,860.97	0.00	0.00	0.00	0.00
9,400.00	89.52	313.20	6,770.64	2,026.95	-2,158.42	2,960.97	0.00	0.00	0.00	0.00
9,500.00	89.52	313.20	6,771.47	2,095.41	-2,231.31	3,060.96	0.00	0.00	0.00	0.00
Hold Angle at 89.52										
9,600.00	89.52	313.20	6,772.30	2,163.86	-2,304.21	3,160.96	0.00	0.00	0.00	0.00
9,700.00	89.52	313.20	6,773.13	2,232.32	-2,377.10	3,260.96	0.00	0.00	0.00	0.00
9,800.00	89.52	313.20	6,773.96	2,300.77	-2,449.99	3,360.95	0.00	0.00	0.00	0.00
9,900.00	89.52	313.20	6,774.79	2,369.22	-2,522.89	3,460.95	0.00	0.00	0.00	0.00
10,000.00	89.52	313.20	6,775.62	2,437.68	-2,595.78	3,560.95	0.00	0.00	0.00	0.00
10,100.00	89.52	313.20	6,776.45	2,506.13	-2,668.67	3,660.94	0.00	0.00	0.00	0.00
10,200.00	89.52	313.20	6,777.28	2,574.59	-2,741.56	3,760.94	0.00	0.00	0.00	0.00
10,300.00	89.52	313.20	6,778.10	2,643.04	-2,814.46	3,860.94	0.00	0.00	0.00	0.00
10,400.00	89.52	313.20	6,778.93	2,711.49	-2,887.35	3,960.93	0.00	0.00	0.00	0.00
10,500.00	89.52	313.20	6,779.76	2,779.95	-2,960.24	4,060.93	0.00	0.00	0.00	0.00
10,600.00	89.52	313.20	6,780.59	2,848.40	-3,033.14	4,160.93	0.00	0.00	0.00	0.00
10,700.00	89.52	313.20	6,781.42	2,916.86	-3,106.03	4,260.92	0.00	0.00	0.00	0.00
10,800.00	89.52	313.20	6,782.25	2,985.31	-3,178.92	4,360.92	0.00	0.00	0.00	0.00
10,900.00	89.52	313.20	6,783.08	3,053.76	-3,251.81	4,460.92	0.00	0.00	0.00	0.00
11,000.00	89.52	313.20	6,783.91	3,122.22	-3,324.71	4,560.91	0.00	0.00	0.00	0.00
11,100.00	89.52	313.20	6,784.74	3,190.67	-3,397.60	4,660.91	0.00	0.00	0.00	0.00
11,200.00	89.52	313.20	6,785.57	3,259.12	-3,470.49	4,760.91	0.00	0.00	0.00	0.00
11,300.00	89.52	313.20	6,786.40	3,327.58	-3,543.39	4,860.90	0.00	0.00	0.00	0.00
11,346.64	89.52	313.20	6,786.79	3,359.50	-3,577.38	4,907.54	0.00	0.00	0.00	0.00
Cox PC GK26-99HZ Plan #1 BH Tgt										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,029.87	6,029.87	0.00	0.00	Kickoff at 6029.87ft
6,550.00	6,505.47	123.71	-131.73	Build Rate = 8.00°/100ft
7,092.37	6,743.34	447.54	-476.58	End Build at 7092.37ft
7,130.00	6,746.62	473.20	-503.91	Hold Angle at 85.00
7,167.37	6,749.88	498.69	-531.05	Kickoff at 7167.37ft
7,195.00	6,751.76	517.56	-551.14	Build Rate = 8.00°/100ft
7,223.87	6,752.58	537.31	-572.18	End Build at 7223.87ft
9,500.00	6,771.47	2,095.41	-2,231.31	Hold Angle at 89.52
11,346.64	6,786.79	3,359.51	-3,577.38	Total Depth = 11346.64ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Cox PC GK26-99HZ Plan #1 BH Tgt	313.20	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,346.64	Plan #1 Proposal	MWD

Plan Report for Cox PC GK26-99HZ - Plan #1 Proposal

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,092.37	6,743.34	7" Casing Pt.	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	6,754.00	Nio B Tgt Base		0.48	313.20
6,712.13	6,611.00	Niobrara		0.48	313.20
6,729.91	6,621.00	Niobrara A		0.48	313.20
6,748.38	6,631.00	Niobrara A Base		0.48	313.20
6,987.55	6,722.00	Niobrara B		0.48	313.20
7,094.09	6,738.00	Nio B Tgt top		0.48	313.20
7,221.81	6,746.00	Nio B Target		0.48	313.20

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Cox PC GK26-99HZ Plan #1 BH Tgt	6,786.79	3,359.50	-3,577.38	Point
Cox PC GK26-99HZ E. Section Line	0.00	0.00	0.00	Polygon
Cox PC GK26-99HZ W. Section Line	0.00	0.00	0.00	Polygon
Cox PC GK26-99HZ N. 600' Setback	0.00	0.00	0.00	Polygon
Cox PC GK26-99HZ W. 600' Setback	0.00	0.00	0.00	Polygon
Cox PC GK26-99HZ S. 600' Setback	0.00	0.00	0.00	Polygon
Cox PC GK26-99HZ E. 600' Setback	0.00	0.00	0.00	Polygon
Cox PC GK26-99HZ N. Section Line	0.00	0.00	0.00	Polygon
Cox PC GK26-99HZ S. Section Line	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 26-T11N-R61W - Cox PC GK26-99HZ - Plan #1

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' @ 5146.00ft (Original Well Elev). Northing and Easting are relative to Cox PC GK26-99HZ

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: 1.00001881

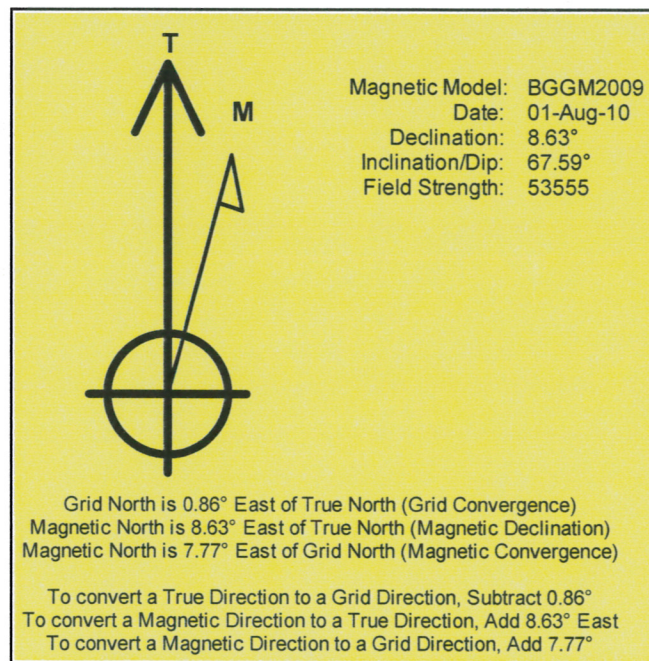
Grid Coordinates of Well: 1,569,410.44 ft N, 3,369,033.56 ft E

Geographical Coordinates of Well: 40° 53' 19.61" N, 104° 09' 55.08" W

Grid Convergence at Surface is: 0.86°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,346.64ft
the Bottom Hole Displacement is 4,907.54ft in the Direction of 313.20° (True).

Magnetic Convergence at surface is: -7.77° (1 August 2010, , BGGM2009)



Project: Weld County, CO
Site: Sec. 26-T11N-R61W
Well: Cox PC GK26-99HZ
Wellbore: Plan #1
Design: Plan #1 Proposal

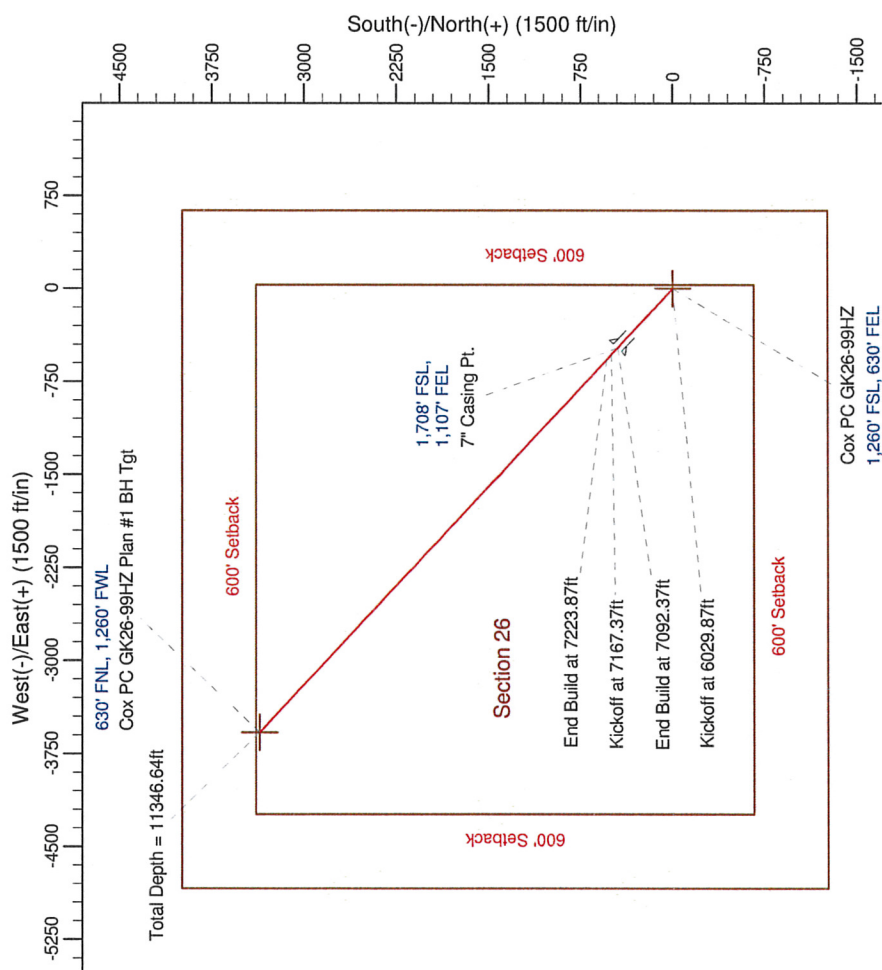
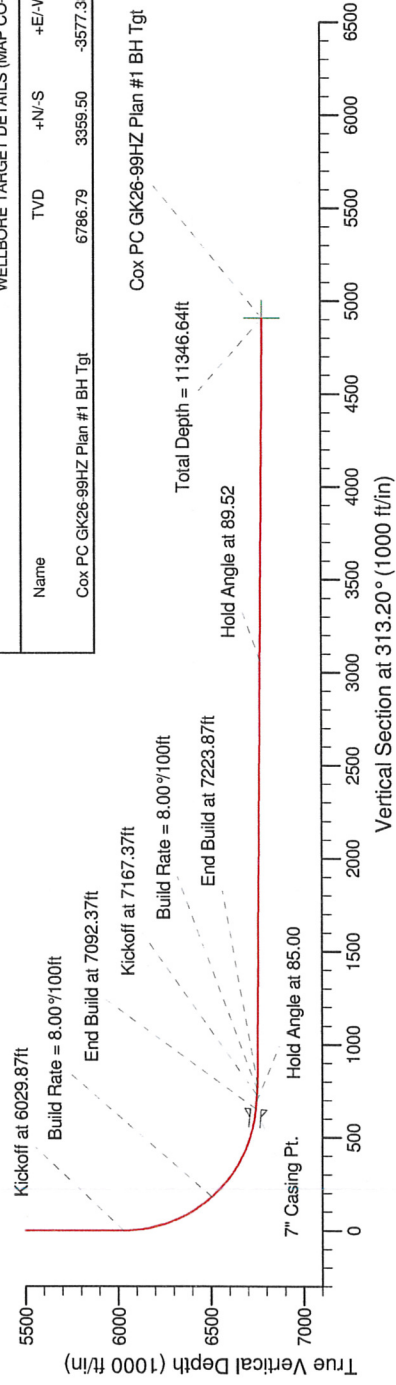
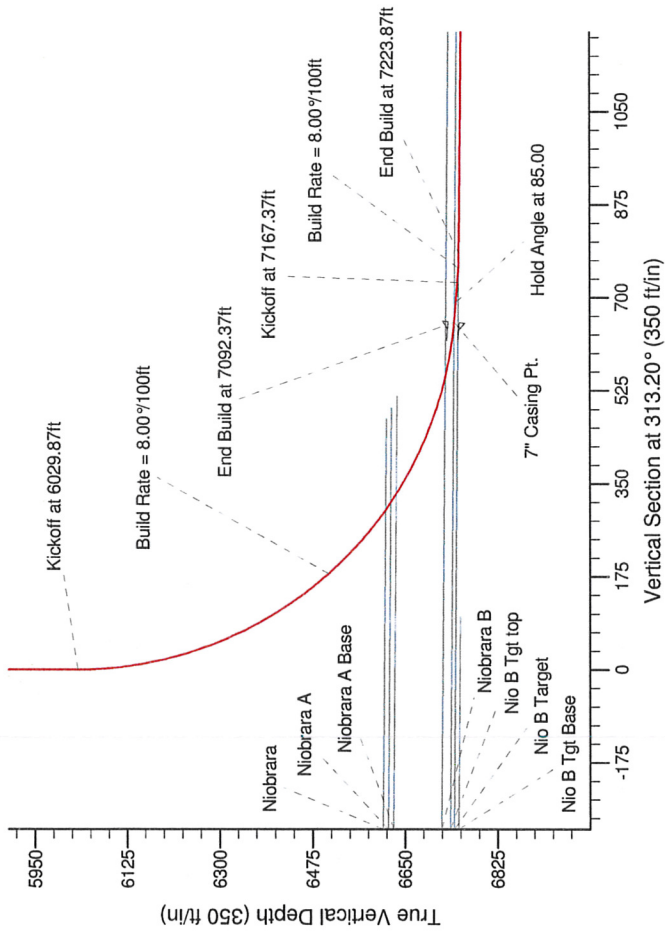
Noble Energy



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	6029.87	0.00	0.00	6029.87	0.00	0.00	0.00	0.00	0.00	0.00
3	7092.37	85.00	313.20	6743.34	447.54	-476.58	8.00	313.20	653.78	0.00
4	7167.37	85.00	313.20	6749.88	496.69	-531.05	0.00	0.00	728.49	0.00
5	7223.87	89.52	313.20	6752.58	537.31	-572.18	8.00	0.00	784.91	0.00
6	7224.34	89.52	313.20	6752.58	537.63	-572.52	1.00	14.79	785.38	0.00
7	11346.64	89.52	313.20	6786.79	3359.50	-3577.38	0.00	0.00	4907.54	0.00

Total Depth = 11346.64ft Cox PC GK26-99HZ Plan #1 BH Tgt



WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Cox PC GK26-99HZ Plan #1 BH Tgt	6786.79	3359.50	-3577.38	1572715.78	3365405.95	40.898000	-104.178240	Point

WELL DETAILS: Cox PC GK26-99HZ

Ground Level:	5122.00
North	1569410.44
East	33659033.56
Lat	40.888780
Long	-104.165300

Plan: Plan #1 Proposal (Cox PC GK26-99HZ/Plan #1)

Created By: Paul A. Bitzan	Date: 14:37, May 05 2010
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____