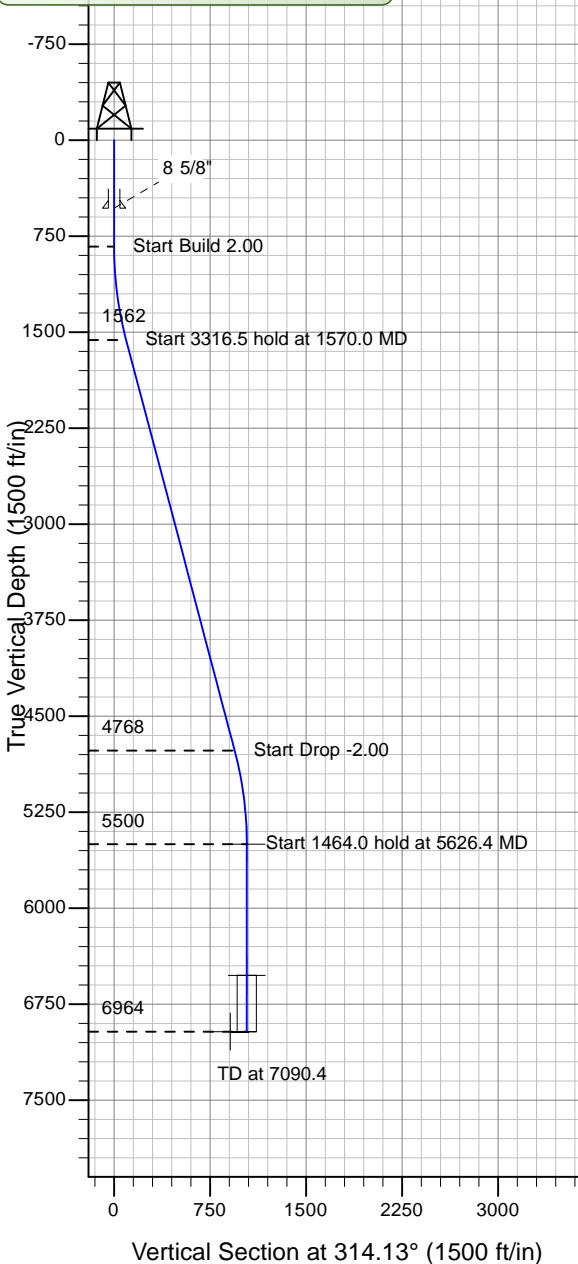


ENSIGN

Directional

APPROVED

By Ryan Calhoun at 11:00 am, May 26, 2010

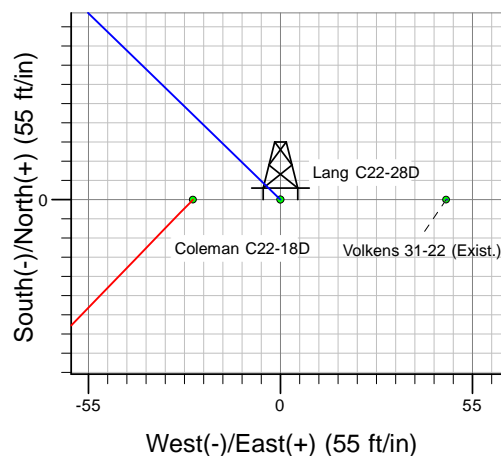
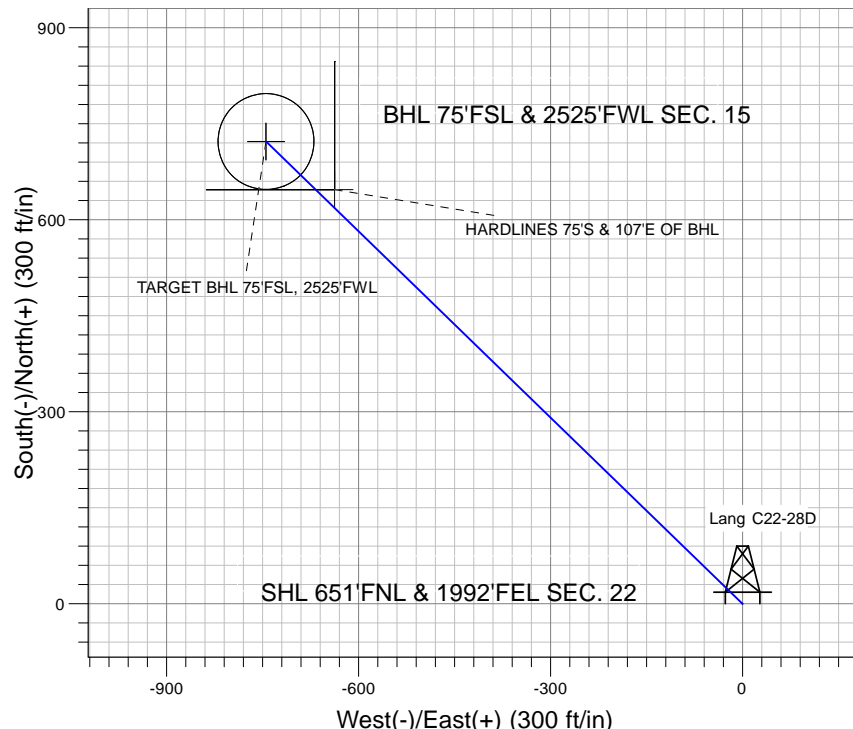


Well Name: Lang C22-28D

Surface Location: Coleman C22-18D Pad Sec.22-T4N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4656.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1354839.26 3269276.76 40° 18' 12.276 N 104° 32' 4.236 W
Original Well Elev WELL @ 4669.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Coleman C22-18D Pad Sec.22-T4N-R64W
Lang C22-28D
Noble Lang C22-28D Plan #1 (05-04-10)
16:35, May 04 2010



Azimuths to True North
Magnetic North: 8.88°

Magnetic Field
Strength: 53224.9snT
Dip Angle: 67.05°
Date: 5/4/2010
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FSL, 2525'FWL	5500.0	722.2	-744.5	40° 18' 19.412 N	104° 32' 13.846 W	Point
TARGET CIRCLE 75'FSL, 2525'FWL	6524.0	722.2	-744.5	40° 18' 19.412 N	104° 32' 13.845 W	Circle (Radius: 75.0)
HARDLINES 75'S & 107'E OF BHL	6964.0	647.2	-637.5	40° 18' 18.671 N	104° 32' 12.464 W	Polygon

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	830.0	0.00	0.00	830.0	0.0	0.0	0.00	0.00	0.0	
3	1570.0	14.80	314.13	1561.8	66.2	-68.2	2.00	314.13	95.0	
4	4886.4	14.80	314.13	4768.2	656.0	-676.3	0.00	0.00	942.2	
5	5626.4	0.00	0.00	5500.0	722.2	-744.5	2.00	180.00	1037.2	TARGET BHL 75'FSL, 2525'FWL
6	7090.4	0.00	0.00	6964.0	722.2	-744.5	0.00	0.00	1037.2	



NOBLE ENERGY INC WELD COUNTY CO

SEC.22-T4N-R64W

Coleman C22-18D Pad Sec.22-T4N-R64W

Lang C22-28D

Wellbore #1

Plan: Noble Lang C22-28D Plan #1 (05-04-10)

Standard Planning Report

04 May, 2010



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lang C22-28D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Project:	SEC.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	North Reference:	True
Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lang C22-28D Plan #1 (05-04-10)		

Project	SEC.22-T4N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Coleman C22-18D Pad Sec.22-T4N-R64W					
Site Position:		Northing:	1,354,838.99ft	Latitude:	40° 18' 12.276 N
From:	Lat/Long	Easting:	3,269,251.66ft	Longitude:	104° 32' 4.560 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well	Lang C22-28D					
Well Position	+N/-S	0.0 ft	Northing:	1,354,839.26 ft	Latitude:	40° 18' 12.276 N
	+E/-W	25.1 ft	Easting:	3,269,276.76 ft	Longitude:	104° 32' 4.236 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,656.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/4/2010	8.88	67.05	53,225

Design	Noble Lang C22-28D Plan #1 (05-04-10)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	314.13

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
830.0	0.00	0.00	830.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,570.0	14.80	314.13	1,561.8	66.2	-68.2	2.00	2.00	0.00	314.13	
4,886.4	14.80	314.13	4,768.2	656.0	-676.3	0.00	0.00	0.00	0.00	
5,626.4	0.00	0.00	5,500.0	722.2	-744.5	2.00	-2.00	0.00	180.00	TARGET BHL 75'F!
7,090.4	0.00	0.00	6,964.0	722.2	-744.5	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lang C22-28D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Project:	SEC.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	North Reference:	True
Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lang C22-28D Plan #1 (05-04-10)		

Planned Survey									
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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
530.0	0.00	0.00	530.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
830.0	0.00	0.00	830.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.20	314.13	840.0	0.0	0.0	0.0	2.00	2.00	0.00
880.0	1.00	314.13	880.0	0.3	-0.3	0.4	2.00	2.00	0.00
920.0	1.80	314.13	920.0	1.0	-1.0	1.4	2.00	2.00	0.00
960.0	2.60	314.13	960.0	2.1	-2.1	2.9	2.00	2.00	0.00
1,000.0	3.40	314.13	999.9	3.5	-3.6	5.0	2.00	2.00	0.00
1,040.0	4.20	314.13	1,039.8	5.4	-5.5	7.7	2.00	2.00	0.00
1,080.0	5.00	314.13	1,079.7	7.6	-7.8	10.9	2.00	2.00	0.00
1,120.0	5.80	314.13	1,119.5	10.2	-10.5	14.7	2.00	2.00	0.00
1,160.0	6.60	314.13	1,159.3	13.2	-13.6	19.0	2.00	2.00	0.00
1,200.0	7.40	314.13	1,199.0	16.6	-17.1	23.9	2.00	2.00	0.00
1,240.0	8.20	314.13	1,238.6	20.4	-21.0	29.3	2.00	2.00	0.00
1,280.0	9.00	314.13	1,278.2	24.6	-25.3	35.3	2.00	2.00	0.00
1,320.0	9.80	314.13	1,317.6	29.1	-30.0	41.8	2.00	2.00	0.00
1,360.0	10.60	314.13	1,357.0	34.0	-35.1	48.9	2.00	2.00	0.00
1,400.0	11.40	314.13	1,396.2	39.4	-40.6	56.5	2.00	2.00	0.00
1,440.0	12.20	314.13	1,435.4	45.0	-46.4	64.7	2.00	2.00	0.00
1,480.0	13.00	314.13	1,474.4	51.1	-52.7	73.4	2.00	2.00	0.00
1,520.0	13.80	314.13	1,513.3	57.6	-59.4	82.7	2.00	2.00	0.00
1,560.0	14.60	314.13	1,552.1	64.4	-66.4	92.5	2.00	2.00	0.00
1,570.0	14.80	314.13	1,561.8	66.2	-68.2	95.0	2.00	2.00	0.00
1,600.0	14.80	314.13	1,590.8	71.5	-73.7	102.7	0.00	0.00	0.00
1,640.0	14.80	314.13	1,629.5	78.6	-81.1	112.9	0.00	0.00	0.00
1,680.0	14.80	314.13	1,668.1	85.7	-88.4	123.1	0.00	0.00	0.00
1,720.0	14.80	314.13	1,706.8	92.9	-95.7	133.4	0.00	0.00	0.00
1,760.0	14.80	314.13	1,745.5	100.0	-103.1	143.6	0.00	0.00	0.00
1,800.0	14.80	314.13	1,784.2	107.1	-110.4	153.8	0.00	0.00	0.00
1,840.0	14.80	314.13	1,822.8	114.2	-117.7	164.0	0.00	0.00	0.00
1,880.0	14.80	314.13	1,861.5	121.3	-125.1	174.2	0.00	0.00	0.00
1,920.0	14.80	314.13	1,900.2	128.4	-132.4	184.4	0.00	0.00	0.00
1,960.0	14.80	314.13	1,938.9	135.5	-139.7	194.7	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lang C22-28D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Project:	SEC.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	North Reference:	True
Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lang C22-28D Plan #1 (05-04-10)		

Planned Survey									
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)
2,000.0	14.80	314.13	1,977.5	142.6	-147.1	204.9	0.00	0.00	0.00
2,040.0	14.80	314.13	2,016.2	149.8	-154.4	215.1	0.00	0.00	0.00
2,080.0	14.80	314.13	2,054.9	156.9	-161.7	225.3	0.00	0.00	0.00
2,120.0	14.80	314.13	2,093.6	164.0	-169.1	235.5	0.00	0.00	0.00
2,160.0	14.80	314.13	2,132.2	171.1	-176.4	245.8	0.00	0.00	0.00
2,200.0	14.80	314.13	2,170.9	178.2	-183.7	256.0	0.00	0.00	0.00
2,240.0	14.80	314.13	2,209.6	185.3	-191.1	266.2	0.00	0.00	0.00
2,280.0	14.80	314.13	2,248.2	192.4	-198.4	276.4	0.00	0.00	0.00
2,320.0	14.80	314.13	2,286.9	199.6	-205.7	286.6	0.00	0.00	0.00
2,360.0	14.80	314.13	2,325.6	206.7	-213.1	296.8	0.00	0.00	0.00
2,400.0	14.80	314.13	2,364.3	213.8	-220.4	307.1	0.00	0.00	0.00
2,440.0	14.80	314.13	2,402.9	220.9	-227.7	317.3	0.00	0.00	0.00
2,480.0	14.80	314.13	2,441.6	228.0	-235.1	327.5	0.00	0.00	0.00
2,520.0	14.80	314.13	2,480.3	235.1	-242.4	337.7	0.00	0.00	0.00
2,560.0	14.80	314.13	2,519.0	242.2	-249.7	347.9	0.00	0.00	0.00
2,600.0	14.80	314.13	2,557.6	249.4	-257.1	358.1	0.00	0.00	0.00
2,640.0	14.80	314.13	2,596.3	256.5	-264.4	368.4	0.00	0.00	0.00
2,680.0	14.80	314.13	2,635.0	263.6	-271.8	378.6	0.00	0.00	0.00
2,720.0	14.80	314.13	2,673.6	270.7	-279.1	388.8	0.00	0.00	0.00
2,760.0	14.80	314.13	2,712.3	277.8	-286.4	399.0	0.00	0.00	0.00
2,800.0	14.80	314.13	2,751.0	284.9	-293.8	409.2	0.00	0.00	0.00
2,840.0	14.80	314.13	2,789.7	292.0	-301.1	419.5	0.00	0.00	0.00
2,880.0	14.80	314.13	2,828.3	299.2	-308.4	429.7	0.00	0.00	0.00
2,920.0	14.80	314.13	2,867.0	306.3	-315.8	439.9	0.00	0.00	0.00
2,960.0	14.80	314.13	2,905.7	313.4	-323.1	450.1	0.00	0.00	0.00
3,000.0	14.80	314.13	2,944.4	320.5	-330.4	460.3	0.00	0.00	0.00
3,040.0	14.80	314.13	2,983.0	327.6	-337.8	470.5	0.00	0.00	0.00
3,080.0	14.80	314.13	3,021.7	334.7	-345.1	480.8	0.00	0.00	0.00
3,120.0	14.80	314.13	3,060.4	341.8	-352.4	491.0	0.00	0.00	0.00
3,160.0	14.80	314.13	3,099.0	349.0	-359.8	501.2	0.00	0.00	0.00
3,200.0	14.80	314.13	3,137.7	356.1	-367.1	511.4	0.00	0.00	0.00
3,240.0	14.80	314.13	3,176.4	363.2	-374.4	521.6	0.00	0.00	0.00
3,280.0	14.80	314.13	3,215.1	370.3	-381.8	531.8	0.00	0.00	0.00
3,320.0	14.80	314.13	3,253.7	377.4	-389.1	542.1	0.00	0.00	0.00
3,360.0	14.80	314.13	3,292.4	384.5	-396.4	552.3	0.00	0.00	0.00
3,400.0	14.80	314.13	3,331.1	391.6	-403.8	562.5	0.00	0.00	0.00
3,440.0	14.80	314.13	3,369.8	398.7	-411.1	572.7	0.00	0.00	0.00
3,480.0	14.80	314.13	3,408.4	405.9	-418.4	582.9	0.00	0.00	0.00
3,520.0	14.80	314.13	3,447.1	413.0	-425.8	593.2	0.00	0.00	0.00
3,560.0	14.80	314.13	3,485.8	420.1	-433.1	603.4	0.00	0.00	0.00
3,600.0	14.80	314.13	3,524.5	427.2	-440.4	613.6	0.00	0.00	0.00
3,640.0	14.80	314.13	3,563.1	434.3	-447.8	623.8	0.00	0.00	0.00
3,680.0	14.80	314.13	3,601.8	441.4	-455.1	634.0	0.00	0.00	0.00
3,720.0	14.80	314.13	3,640.5	448.5	-462.4	644.2	0.00	0.00	0.00
3,760.0	14.80	314.13	3,679.1	455.7	-469.8	654.5	0.00	0.00	0.00
3,800.0	14.80	314.13	3,717.8	462.8	-477.1	664.7	0.00	0.00	0.00
3,840.0	14.80	314.13	3,756.5	469.9	-484.4	674.9	0.00	0.00	0.00
3,880.0	14.80	314.13	3,795.2	477.0	-491.8	685.1	0.00	0.00	0.00
3,920.0	14.80	314.13	3,833.8	484.1	-499.1	695.3	0.00	0.00	0.00
3,960.0	14.80	314.13	3,872.5	491.2	-506.5	705.5	0.00	0.00	0.00
4,000.0	14.80	314.13	3,911.2	498.3	-513.8	715.8	0.00	0.00	0.00
4,040.0	14.80	314.13	3,949.9	505.5	-521.1	726.0	0.00	0.00	0.00
4,080.0	14.80	314.13	3,988.5	512.6	-528.5	736.2	0.00	0.00	0.00
4,120.0	14.80	314.13	4,027.2	519.7	-535.8	746.4	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lang C22-28D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Project:	SEC.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	North Reference:	True
Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lang C22-28D Plan #1 (05-04-10)		

Planned Survey									
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)
4,160.0	14.80	314.13	4,065.9	526.8	-543.1	756.6	0.00	0.00	0.00
4,200.0	14.80	314.13	4,104.5	533.9	-550.5	766.9	0.00	0.00	0.00
4,240.0	14.80	314.13	4,143.2	541.0	-557.8	777.1	0.00	0.00	0.00
4,280.0	14.80	314.13	4,181.9	548.1	-565.1	787.3	0.00	0.00	0.00
4,320.0	14.80	314.13	4,220.6	555.3	-572.5	797.5	0.00	0.00	0.00
4,360.0	14.80	314.13	4,259.2	562.4	-579.8	807.7	0.00	0.00	0.00
4,400.0	14.80	314.13	4,297.9	569.5	-587.1	817.9	0.00	0.00	0.00
4,440.0	14.80	314.13	4,336.6	576.6	-594.5	828.2	0.00	0.00	0.00
4,480.0	14.80	314.13	4,375.3	583.7	-601.8	838.4	0.00	0.00	0.00
4,520.0	14.80	314.13	4,413.9	590.8	-609.1	848.6	0.00	0.00	0.00
4,560.0	14.80	314.13	4,452.6	597.9	-616.5	858.8	0.00	0.00	0.00
4,600.0	14.80	314.13	4,491.3	605.1	-623.8	869.0	0.00	0.00	0.00
4,640.0	14.80	314.13	4,529.9	612.2	-631.1	879.2	0.00	0.00	0.00
4,680.0	14.80	314.13	4,568.6	619.3	-638.5	889.5	0.00	0.00	0.00
4,720.0	14.80	314.13	4,607.3	626.4	-645.8	899.7	0.00	0.00	0.00
4,760.0	14.80	314.13	4,646.0	633.5	-653.1	909.9	0.00	0.00	0.00
4,800.0	14.80	314.13	4,684.6	640.6	-660.5	920.1	0.00	0.00	0.00
4,840.0	14.80	314.13	4,723.3	647.7	-667.8	930.3	0.00	0.00	0.00
4,880.0	14.80	314.13	4,762.0	654.9	-675.1	940.6	0.00	0.00	0.00
4,886.4	14.80	314.13	4,768.2	656.0	-676.3	942.2	0.00	0.00	0.00
4,920.0	14.13	314.13	4,800.7	661.8	-682.3	950.6	2.00	-2.00	0.00
4,960.0	13.33	314.13	4,839.6	668.4	-689.2	960.1	2.00	-2.00	0.00
5,000.0	12.53	314.13	4,878.6	674.7	-695.6	969.0	2.00	-2.00	0.00
5,040.0	11.73	314.13	4,917.7	680.5	-701.6	977.4	2.00	-2.00	0.00
5,080.0	10.93	314.13	4,956.9	686.0	-707.2	985.3	2.00	-2.00	0.00
5,120.0	10.13	314.13	4,996.2	691.1	-712.5	992.6	2.00	-2.00	0.00
5,160.0	9.33	314.13	5,035.6	695.8	-717.3	999.4	2.00	-2.00	0.00
5,200.0	8.53	314.13	5,075.1	700.1	-721.8	1,005.6	2.00	-2.00	0.00
5,240.0	7.73	314.13	5,114.7	704.0	-725.9	1,011.2	2.00	-2.00	0.00
5,280.0	6.93	314.13	5,154.4	707.6	-729.5	1,016.3	2.00	-2.00	0.00
5,320.0	6.13	314.13	5,194.2	710.8	-732.8	1,020.9	2.00	-2.00	0.00
5,360.0	5.33	314.13	5,234.0	713.5	-735.7	1,024.9	2.00	-2.00	0.00
5,400.0	4.53	314.13	5,273.8	715.9	-738.1	1,028.3	2.00	-2.00	0.00
5,440.0	3.73	314.13	5,313.7	717.9	-740.2	1,031.2	2.00	-2.00	0.00
5,480.0	2.93	314.13	5,353.6	719.6	-741.9	1,033.5	2.00	-2.00	0.00
5,520.0	2.13	314.13	5,393.6	720.8	-743.1	1,035.3	2.00	-2.00	0.00
5,560.0	1.33	314.13	5,433.6	721.6	-744.0	1,036.5	2.00	-2.00	0.00
5,600.0	0.53	314.13	5,473.6	722.1	-744.5	1,037.1	2.00	-2.00	0.00
5,626.4	0.00	0.00	5,500.0	722.2	-744.5	1,037.2	2.00	-2.00	173.59
TARGET BHL 75'FSL, 2525'FWL									
5,640.0	0.00	0.00	5,513.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
5,680.0	0.00	0.00	5,553.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
5,720.0	0.00	0.00	5,593.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
5,760.0	0.00	0.00	5,633.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,673.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
5,840.0	0.00	0.00	5,713.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
5,880.0	0.00	0.00	5,753.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
5,920.0	0.00	0.00	5,793.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
5,960.0	0.00	0.00	5,833.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,873.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,040.0	0.00	0.00	5,913.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,080.0	0.00	0.00	5,953.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,120.0	0.00	0.00	5,993.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,160.0	0.00	0.00	6,033.6	722.2	-744.5	1,037.2	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lang C22-28D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Project:	SEC.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	North Reference:	True
Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lang C22-28D Plan #1 (05-04-10)		

Planned Survey									
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)
6,200.0	0.00	0.00	6,073.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,240.0	0.00	0.00	6,113.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,280.0	0.00	0.00	6,153.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,320.0	0.00	0.00	6,193.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,360.0	0.00	0.00	6,233.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,273.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,440.0	0.00	0.00	6,313.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,480.0	0.00	0.00	6,353.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,520.0	0.00	0.00	6,393.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,560.0	0.00	0.00	6,433.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,600.0	0.00	0.00	6,473.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,640.0	0.00	0.00	6,513.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,650.4	0.00	0.00	6,524.0	722.2	-744.5	1,037.2	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 75'FSL, 2525'FWL									
6,680.0	0.00	0.00	6,553.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,720.0	0.00	0.00	6,593.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,760.0	0.00	0.00	6,633.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,800.0	0.00	0.00	6,673.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,840.0	0.00	0.00	6,713.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,880.0	0.00	0.00	6,753.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,920.0	0.00	0.00	6,793.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
6,940.4	0.00	0.00	6,814.0	722.2	-744.5	1,037.2	0.00	0.00	0.00
CODELL									
6,960.0	0.00	0.00	6,833.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,873.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
7,040.0	0.00	0.00	6,913.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
7,080.0	0.00	0.00	6,953.6	722.2	-744.5	1,037.2	0.00	0.00	0.00
7,090.4	0.00	0.00	6,964.0	722.2	-744.5	1,037.2	0.00	0.00	0.00
HARDLINES 75'S & 107'E OF BHL									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
HARDLINES 75'S & 1	0.00	0.00	6,964.0	647.2	-637.5	1,355,479.45	3,268,632.28	40° 18' 18.671 N	104° 32' 12.464 W
- plan misses target center by 130.7ft at 7090.4ft MD (6964.0 TVD, 722.2 N, -744.5 E)									
- Polygon									
Point 1			6,964.0	0.0	0.0	1,355,479.45	3,268,632.28		
Point 2			6,964.0	0.0	-200.0	1,355,477.27	3,268,432.30		
Point 3			6,964.0	0.0	0.0	1,355,479.45	3,268,632.28		
Point 4			6,964.0	200.0	0.0	1,355,679.43	3,268,630.10		
TARGET CIRCLE 75'	0.00	0.00	6,524.0	722.2	-744.5	1,355,553.28	3,268,524.47	40° 18' 19.412 N	104° 32' 13.845 W
- plan misses target center by 0.1ft at 6650.4ft MD (6524.0 TVD, 722.2 N, -744.5 E)									
- Circle (radius 75.0)									
TARGET BHL 75'FSL	0.00	0.00	5,500.0	722.2	-744.5	1,355,553.24	3,268,524.43	40° 18' 19.412 N	104° 32' 13.846 W
- plan hits target center									
- Point									

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lang C22-28D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Project:	SEC.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	North Reference:	True
Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lang C22-28D Plan #1 (05-04-10)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
530.0	530.0	8 5/8"	8-5/8	12-1/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,650.4	6,524.0	NIOBRARA		0.00	
6,940.4	6,814.0	CODELL		0.00	

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.22-T4N-R64W

Coleman C22-18D Pad Sec.22-T4N-R64W

Lang C22-28D

Wellbore #1

Noble Lang C22-28D Plan #1 (05-04-10)

Anticollision Report

04 May, 2010

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Lang C22-28D
Project:	SEC.22-T4N-R64W	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Reference Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM den0-adp01 Server Data
Reference Design:	Noble Lang C22-28D Plan #1 (05-04-10)	Offset TVD Reference:	Offset Datum

Reference	Noble Lang C22-28D Plan #1 (05-04)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 2,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 5/4/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,090.4	Noble Lang C22-28D Plan #1 (05-04-10) (MWD		MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Coleman C22-18D Pad Sec.22-T4N-R64W						
Coleman C22-18D - Wellbore #1 - Noble Coleman C22-1	600.0	600.0	25.1	22.7	10.275	CC, ES
Coleman C22-18D - Wellbore #1 - Noble Coleman C22-1	800.0	798.8	28.8	25.5	8.771	SF
Volkens 31-22 (Exist.) - Wellbore #1 - Design #1	800.0	800.0	47.4	44.1	14.187	CC, ES
Volkens 31-22 (Exist.) - Wellbore #1 - Design #1	1,000.0	999.9	51.2	46.9	12.095	SF

Offset Design												
Coleman C22-18D Pad Sec.22-T4N-R64W - Coleman C22-18D - Wellbore #1 - Noble Coleman C22-18I												
Survey Program: 0-MWD												
Reference		Offset		Semi Major Axis			Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-25.1	25.1			
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-25.1	25.1	24.9	0.20	128.372
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-25.1	25.1	24.5	0.65	38.914
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-25.1	25.1	24.0	1.09	22.933
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-25.1	25.1	23.6	1.54	16.257
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-25.1	25.1	23.1	1.99	12.591
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-25.1	25.1	22.7	2.44	10.275 CC, ES
700.0	700.0	699.6	699.6	1.4	1.4	-91.35	-0.6	-25.7	25.7	22.8	2.87	8.940
800.0	800.0	798.8	798.7	1.7	1.6	-97.13	-3.6	-28.6	28.8	25.5	3.29	8.771 SF
900.0	900.0	897.6	897.2	1.9	1.8	-60.12	-9.0	-33.8	34.6	30.9	3.70	9.350
1,000.0	999.9	995.7	994.7	2.1	2.0	-72.01	-16.7	-41.3	43.1	39.0	4.13	10.437
1,100.0	1,099.6	1,092.7	1,090.7	2.3	2.3	-83.65	-26.8	-51.0	55.7	51.2	4.57	12.185
1,200.0	1,199.0	1,188.3	1,184.8	2.6	2.6	-93.20	-39.0	-62.8	73.3	68.3	5.05	14.533
1,300.0	1,297.9	1,282.3	1,276.7	2.9	3.0	-100.40	-53.1	-76.5	96.1	90.5	5.56	17.285
1,400.0	1,396.2	1,374.4	1,366.0	3.2	3.4	-105.65	-69.1	-92.0	123.8	117.6	6.12	20.236
1,500.0	1,493.9	1,468.6	1,457.0	3.5	3.8	-109.88	-86.5	-108.9	154.9	148.2	6.73	23.021
1,600.0	1,590.8	1,562.2	1,547.5	3.9	4.3	-113.63	-103.9	-125.7	188.0	180.6	7.39	25.438
1,700.0	1,687.5	1,655.6	1,637.7	4.4	4.7	-116.78	-121.2	-142.5	222.1	214.0	8.10	27.426
1,800.0	1,784.2	1,749.0	1,727.9	4.8	5.2	-119.10	-138.5	-159.3	256.7	247.8	8.83	29.080
1,900.0	1,880.9	1,842.4	1,818.2	5.3	5.7	-120.87	-155.9	-176.0	291.5	281.9	9.57	30.455
2,000.0	1,977.5	1,935.8	1,908.4	5.8	6.2	-122.26	-173.2	-192.8	326.5	316.2	10.33	31.609
2,100.0	2,074.2	2,029.2	1,998.6	6.3	6.7	-123.38	-190.5	-209.6	361.7	350.6	11.10	32.587
2,200.0	2,170.9	2,122.6	2,088.9	6.8	7.2	-124.31	-207.8	-226.4	397.0	385.1	11.88	33.423

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Lang C22-28D
Project:	SEC.22-T4N-R64W	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Reference Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM den0-adp01 Server Data
Reference Design:	Noble Lang C22-28D Plan #1 (05-04-10)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
2,300.0	2,267.6	2,216.0	2,179.1	7.3	7.7	-125.08	-225.1	-243.1	432.3	419.6	12.66	34.144	
2,400.0	2,364.3	2,309.4	2,269.3	7.8	8.2	-125.74	-242.5	-259.9	467.7	454.2	13.45	34.771	
2,500.0	2,460.9	2,402.8	2,359.6	8.4	8.7	-126.30	-259.8	-276.7	503.1	488.9	14.25	35.320	
2,600.0	2,557.6	2,496.2	2,449.8	8.9	9.2	-126.80	-277.1	-293.5	538.6	523.6	15.04	35.805	
2,700.0	2,654.3	2,589.6	2,540.0	9.4	9.7	-127.23	-294.4	-310.2	574.1	558.3	15.84	36.235	
2,800.0	2,751.0	2,683.0	2,630.3	9.9	10.2	-127.61	-311.7	-327.0	609.7	593.0	16.65	36.619	
2,900.0	2,847.7	2,776.4	2,720.5	10.4	10.7	-127.94	-329.1	-343.8	645.2	627.8	17.46	36.964	
3,000.0	2,944.4	2,869.8	2,810.8	11.0	11.2	-128.25	-346.4	-360.5	680.8	662.5	18.26	37.275	
3,100.0	3,041.0	2,963.2	2,901.0	11.5	11.7	-128.52	-363.7	-377.3	716.4	697.3	19.07	37.557	
3,200.0	3,137.7	3,056.6	2,991.2	12.0	12.2	-128.77	-381.0	-394.1	752.0	732.1	19.89	37.814	
3,300.0	3,234.4	3,150.0	3,081.5	12.6	12.7	-128.99	-398.4	-410.9	787.6	766.9	20.70	38.048	
3,400.0	3,331.1	3,243.4	3,171.7	13.1	13.2	-129.20	-415.7	-427.6	823.2	801.7	21.52	38.263	
3,500.0	3,427.8	3,336.8	3,261.9	13.6	13.7	-129.39	-433.0	-444.4	858.9	836.5	22.33	38.461	
3,600.0	3,524.5	3,430.2	3,352.2	14.2	14.3	-129.56	-450.3	-461.2	894.5	871.4	23.15	38.643	
3,700.0	3,621.1	3,523.6	3,442.4	14.7	14.8	-129.72	-467.6	-478.0	930.2	906.2	23.97	38.812	
3,800.0	3,717.8	3,617.0	3,532.6	15.2	15.3	-129.87	-485.0	-494.7	965.8	941.0	24.78	38.968	
3,900.0	3,814.5	3,710.4	3,622.9	15.8	15.8	-130.01	-502.3	-511.5	1,001.5	975.9	25.60	39.114	
4,000.0	3,911.2	3,803.8	3,713.1	16.3	16.3	-130.13	-519.6	-528.3	1,037.1	1,010.7	26.42	39.249	
4,100.0	4,007.9	3,897.2	3,803.3	16.8	16.8	-130.25	-536.9	-545.0	1,072.8	1,045.6	27.24	39.376	
4,200.0	4,104.5	3,990.6	3,893.6	17.4	17.3	-130.37	-554.2	-561.8	1,108.5	1,080.4	28.07	39.495	
4,300.0	4,201.2	4,084.0	3,983.8	17.9	17.8	-130.47	-571.6	-578.6	1,144.1	1,115.3	28.89	39.606	
4,400.0	4,297.9	4,177.4	4,074.0	18.4	18.4	-130.57	-588.9	-595.4	1,179.8	1,150.1	29.71	39.711	
4,500.0	4,394.6	4,270.8	4,164.3	19.0	18.9	-130.66	-606.2	-612.1	1,215.5	1,185.0	30.53	39.809	
4,600.0	4,491.3	4,364.2	4,254.5	19.5	19.4	-130.75	-623.5	-628.9	1,251.2	1,219.8	31.36	39.902	
4,700.0	4,588.0	4,457.6	4,344.7	20.1	19.9	-130.83	-640.8	-645.7	1,286.9	1,254.7	32.18	39.990	
4,800.0	4,684.6	4,551.0	4,435.0	20.6	20.4	-130.91	-658.2	-662.5	1,322.6	1,289.6	33.00	40.072	
4,900.0	4,781.3	4,679.9	4,559.9	21.1	21.0	-131.14	-680.8	-684.4	1,357.4	1,323.5	33.89	40.057	
5,000.0	4,878.6	4,826.3	4,703.4	21.5	21.4	-131.87	-701.7	-704.6	1,387.4	1,352.7	34.73	39.947	
5,100.0	4,976.5	4,976.6	4,852.1	21.9	21.8	-132.54	-717.6	-720.0	1,411.7	1,376.2	35.49	39.779	
5,200.0	5,075.1	5,129.8	5,004.6	22.2	22.1	-133.17	-728.0	-730.1	1,429.9	1,393.7	36.14	39.568	
5,300.0	5,174.3	5,285.0	5,159.7	22.4	22.4	-133.76	-732.6	-734.5	1,441.9	1,405.2	36.67	39.318	
5,400.0	5,273.8	5,399.2	5,273.8	22.6	22.5	-134.17	-732.8	-734.7	1,448.7	1,411.7	37.07	39.085	
5,500.0	5,373.6	5,499.0	5,373.6	22.8	22.6	-134.41	-732.8	-734.7	1,453.0	1,415.7	37.39	38.865	
5,600.0	5,473.6	5,598.9	5,473.6	22.9	22.7	-134.51	-732.8	-734.7	1,454.9	1,417.3	37.66	38.635	
5,700.0	5,573.6	5,698.9	5,573.6	23.0	22.8	179.61	-732.8	-734.7	1,455.0	1,417.1	37.90	38.386	
5,800.0	5,673.6	5,798.9	5,673.6	23.2	22.9	179.61	-732.8	-734.7	1,455.0	1,416.8	38.17	38.117	
5,900.0	5,773.6	5,898.9	5,773.6	23.3	23.0	179.61	-732.8	-734.7	1,455.0	1,416.6	38.44	37.850	
6,000.0	5,873.6	5,998.9	5,873.6	23.4	23.1	179.61	-732.8	-734.7	1,455.0	1,416.3	38.72	37.582	
6,100.0	5,973.6	6,098.9	5,973.6	23.5	23.2	179.61	-732.8	-734.7	1,455.0	1,416.0	38.99	37.316	
6,200.0	6,073.6	6,198.9	6,073.6	23.6	23.3	179.61	-732.8	-734.7	1,455.0	1,415.7	39.27	37.050	
6,300.0	6,173.6	6,298.9	6,173.6	23.8	23.4	179.61	-732.8	-734.7	1,455.0	1,415.4	39.55	36.785	
6,400.0	6,273.6	6,398.9	6,273.6	23.9	23.5	179.61	-732.8	-734.7	1,455.0	1,415.2	39.84	36.520	
6,500.0	6,373.6	6,498.9	6,373.6	24.0	23.6	179.61	-732.8	-734.7	1,455.0	1,414.9	40.13	36.257	
6,600.0	6,473.6	6,598.9	6,473.6	24.1	23.7	179.61	-732.8	-734.7	1,455.0	1,414.6	40.42	35.995	
6,700.0	6,573.6	6,698.9	6,573.6	24.3	23.9	179.61	-732.8	-734.7	1,455.0	1,414.3	40.72	35.735	
6,800.0	6,673.6	6,798.9	6,673.6	24.4	24.0	179.61	-732.8	-734.7	1,455.0	1,414.0	41.01	35.475	
6,900.0	6,773.6	6,898.9	6,773.6	24.5	24.1	179.61	-732.8	-734.7	1,455.0	1,413.7	41.31	35.217	
7,000.0	6,873.6	6,998.9	6,873.6	24.7	24.2	179.61	-732.8	-734.7	1,455.0	1,413.4	41.62	34.961	
7,090.4	6,964.0	7,089.4	6,964.0	24.8	24.3	179.61	-732.8	-734.7	1,455.0	1,413.1	41.89	34.730	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Lang C22-28D
Project:	SEC.22-T4N-R64W	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Reference Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM den0-adp01 Server Data
Reference Design:	Noble Lang C22-28D Plan #1 (05-04-10)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0ft
Survey Program: 0-MWD												Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	47.4	47.4				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	47.4	47.4	47.2	0.20	242.481	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	47.4	47.4	46.8	0.65	73.505	
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	47.4	47.4	46.3	1.09	43.318	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	47.4	47.4	45.9	1.54	30.707	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	47.4	47.4	45.4	1.99	23.783	
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	47.4	47.4	45.0	2.44	19.407	
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	47.4	47.4	44.5	2.89	16.392	
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	47.4	47.4	44.1	3.34	14.187 CC, ES	
900.0	900.0	900.0	900.0	1.9	1.9	136.58	0.0	47.4	48.0	44.2	3.79	12.678	
1,000.0	999.9	999.9	999.9	2.1	2.1	139.76	0.0	47.4	51.2	46.9	4.23	12.095 SF	
1,100.0	1,099.6	1,099.6	1,099.6	2.3	2.3	144.65	0.0	47.4	57.2	52.6	4.67	12.253	
1,200.0	1,199.0	1,199.0	1,199.0	2.6	2.6	150.10	0.0	47.4	66.6	61.5	5.11	13.041	
1,300.0	1,297.9	1,297.9	1,297.9	2.9	2.8	155.23	0.0	47.4	79.7	74.1	5.55	14.359	
1,400.0	1,396.2	1,396.2	1,396.2	3.2	3.0	159.60	0.0	47.4	96.4	90.4	5.98	16.114	
1,500.0	1,493.9	1,493.9	1,493.9	3.5	3.2	163.15	0.0	47.4	116.8	110.4	6.41	18.219	
1,600.0	1,590.8	1,590.8	1,590.8	3.9	3.4	165.98	0.0	47.4	140.7	133.8	6.85	20.550	
1,700.0	1,687.5	1,687.5	1,687.5	4.4	3.7	168.12	0.0	47.4	165.6	158.3	7.31	22.668	
1,800.0	1,784.2	1,784.2	1,784.2	4.8	3.9	169.70	0.0	47.4	190.7	182.9	7.77	24.539	
1,900.0	1,880.9	1,880.9	1,880.9	5.3	4.1	170.91	0.0	47.4	215.9	207.7	8.24	26.198	
2,000.0	1,977.5	1,977.5	1,977.5	5.8	4.3	171.87	0.0	47.4	241.2	232.5	8.71	27.676	
2,100.0	2,074.2	2,074.2	2,074.2	6.3	4.5	172.64	0.0	47.4	266.5	257.3	9.19	28.997	
2,200.0	2,170.9	2,170.9	2,170.9	6.8	4.8	173.28	0.0	47.4	291.9	282.2	9.67	30.185	
2,300.0	2,267.6	2,267.6	2,267.6	7.3	5.0	173.82	0.0	47.4	317.3	307.1	10.15	31.256	
2,400.0	2,364.3	2,364.3	2,364.3	7.8	5.2	174.28	0.0	47.4	342.7	332.1	10.63	32.227	
2,500.0	2,460.9	2,460.9	2,460.9	8.4	5.4	174.68	0.0	47.4	368.1	357.0	11.12	33.111	
2,600.0	2,557.6	2,557.6	2,557.6	8.9	5.6	175.02	0.0	47.4	393.6	382.0	11.60	33.917	
2,700.0	2,654.3	2,654.3	2,654.3	9.4	5.8	175.33	0.0	47.4	419.0	406.9	12.09	34.657	
2,800.0	2,751.0	2,751.0	2,751.0	9.9	6.1	175.60	0.0	47.4	444.5	431.9	12.58	35.337	
2,900.0	2,847.7	2,847.7	2,847.7	10.4	6.3	175.83	0.0	47.4	470.0	456.9	13.07	35.964	
3,000.0	2,944.4	2,944.4	2,944.4	11.0	6.5	176.05	0.0	47.4	495.5	481.9	13.56	36.543	
3,100.0	3,041.0	3,041.0	3,041.0	11.5	6.7	176.24	0.0	47.4	521.0	506.9	14.05	37.081	
3,200.0	3,137.7	3,137.7	3,137.7	12.0	6.9	176.42	0.0	47.4	546.4	531.9	14.54	37.581	
3,300.0	3,234.4	3,234.4	3,234.4	12.6	7.1	176.58	0.0	47.4	571.9	556.9	15.03	38.047	
3,400.0	3,331.1	3,331.1	3,331.1	13.1	7.4	176.72	0.0	47.4	597.5	581.9	15.53	38.482	
3,500.0	3,427.8	3,427.8	3,427.8	13.6	7.6	176.86	0.0	47.4	623.0	606.9	16.02	38.889	
3,600.0	3,524.5	3,524.5	3,524.5	14.2	7.8	176.98	0.0	47.4	648.5	632.0	16.51	39.271	
3,700.0	3,621.1	3,621.1	3,621.1	14.7	8.0	177.10	0.0	47.4	674.0	657.0	17.01	39.630	
3,800.0	3,717.8	3,717.8	3,717.8	15.2	8.2	177.20	0.0	47.4	699.5	682.0	17.50	39.968	
3,900.0	3,814.5	3,814.5	3,814.5	15.8	8.4	177.30	0.0	47.4	725.0	707.0	18.00	40.286	
4,000.0	3,911.2	3,911.2	3,911.2	16.3	8.7	177.39	0.0	47.4	750.5	732.0	18.49	40.587	
4,100.0	4,007.9	4,007.9	4,007.9	16.8	8.9	177.48	0.0	47.4	776.0	757.1	18.99	40.871	
4,200.0	4,104.5	4,104.5	4,104.5	17.4	9.1	177.56	0.0	47.4	801.6	782.1	19.48	41.141	
4,300.0	4,201.2	4,201.2	4,201.2	17.9	9.3	177.63	0.0	47.4	827.1	807.1	19.98	41.396	
4,400.0	4,297.9	4,297.9	4,297.9	18.4	9.5	177.70	0.0	47.4	852.6	832.1	20.48	41.638	
4,500.0	4,394.6	4,394.6	4,394.6	19.0	9.8	177.77	0.0	47.4	878.1	857.2	20.97	41.869	
4,600.0	4,491.3	4,491.3	4,491.3	19.5	10.0	177.83	0.0	47.4	903.7	882.2	21.47	42.088	
4,700.0	4,588.0	4,588.0	4,588.0	20.1	10.2	177.89	0.0	47.4	929.2	907.2	21.97	42.297	
4,800.0	4,684.6	4,684.6	4,684.6	20.6	10.4	177.95	0.0	47.4	954.7	932.3	22.47	42.496	
4,900.0	4,781.3	4,781.3	4,781.3	21.1	10.6	178.01	0.0	47.4	980.2	957.3	22.97	42.667	
5,000.0	4,878.6	4,878.6	4,878.6	21.5	10.8	178.07	0.0	47.4	1,003.6	980.1	23.50	42.700	
5,100.0	4,976.5	4,976.5	4,976.5	21.9	11.1	178.12	0.0	47.4	1,023.6	999.6	24.00	42.646	

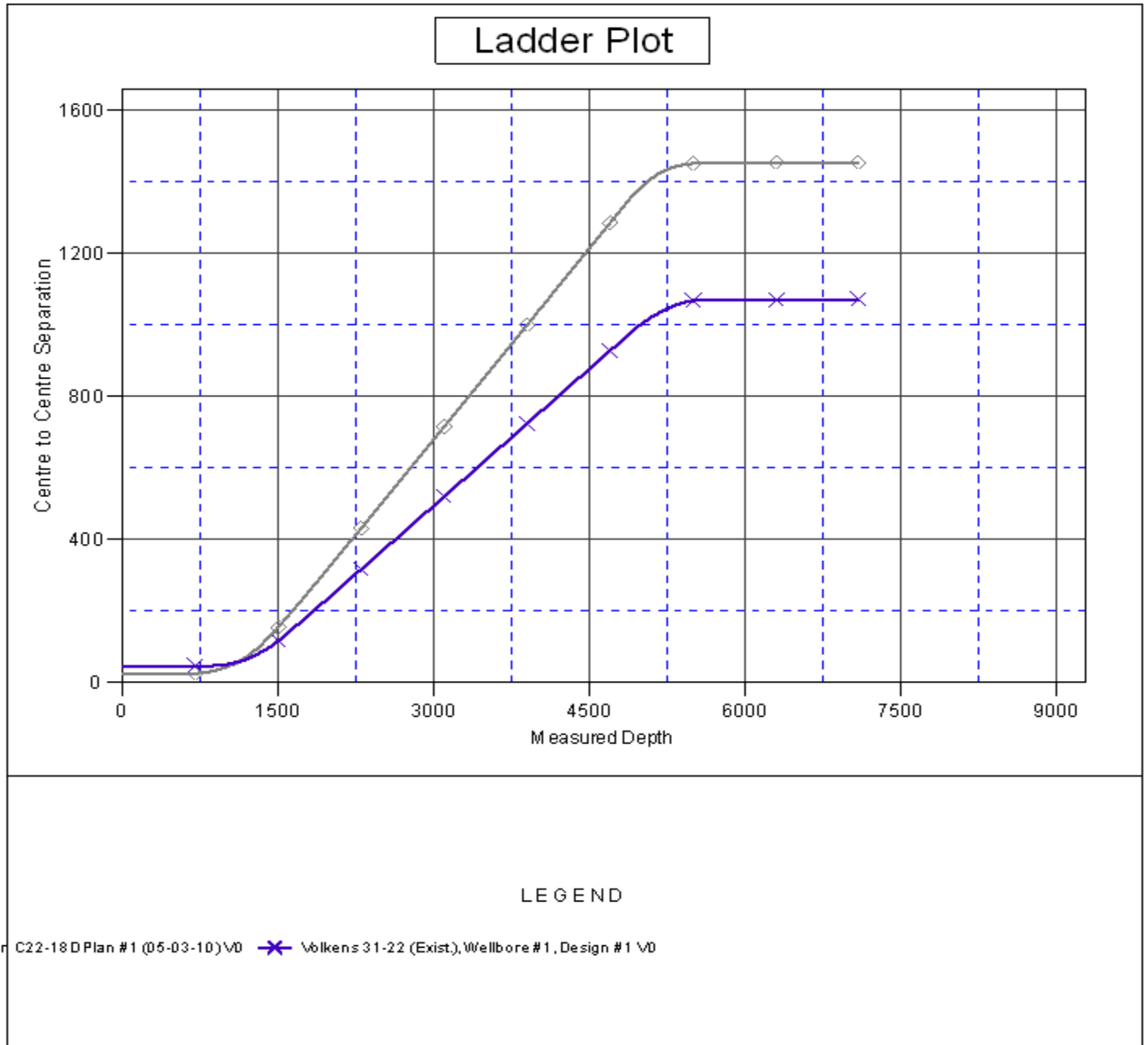
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Lang C22-28D
Project:	SEC.22-T4N-R64W	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Reference Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM den0-adp01 Server Data
Reference Design:	Noble Lang C22-28D Plan #1 (05-04-10)	Offset TVD Reference:	Offset Datum

Offset Design Coleman C22-18D Pad Sec.22-T4N-R64W - Volkens 31-22 (Exist.) - Wellbore #1 - Design #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	5,075.1	5,075.1	5,075.1	22.2	11.3	178.16	0.0	47.4	1,040.1	1,015.7	24.47	42.513	
5,300.0	5,174.3	5,174.3	5,174.3	22.4	11.5	178.19	0.0	47.4	1,053.2	1,028.3	24.90	42.305	
5,400.0	5,273.8	5,273.8	5,273.8	22.6	11.7	178.21	0.0	47.4	1,062.8	1,037.6	25.29	42.027	
5,500.0	5,373.6	5,373.6	5,373.6	22.8	12.0	178.23	0.0	47.4	1,069.0	1,043.4	25.65	41.683	
5,600.0	5,473.6	5,473.6	5,473.6	22.9	12.2	178.23	0.0	47.4	1,071.7	1,045.7	25.96	41.274	
5,700.0	5,573.6	5,573.6	5,573.6	23.0	12.4	132.36	0.0	47.4	1,071.8	1,045.5	26.33	40.701	
5,800.0	5,673.6	5,673.6	5,673.6	23.2	12.6	132.36	0.0	47.4	1,071.8	1,045.0	26.74	40.079	
5,900.0	5,773.6	5,773.6	5,773.6	23.3	12.9	132.36	0.0	47.4	1,071.8	1,044.6	27.15	39.473	
6,000.0	5,873.6	5,873.6	5,873.6	23.4	13.1	132.36	0.0	47.4	1,071.8	1,044.2	27.56	38.884	
6,100.0	5,973.6	5,973.6	5,973.6	23.5	13.3	132.36	0.0	47.4	1,071.8	1,043.8	27.98	38.311	
6,200.0	6,073.6	6,073.6	6,073.6	23.6	13.5	132.36	0.0	47.4	1,071.8	1,043.4	28.39	37.753	
6,300.0	6,173.6	6,173.6	6,173.6	23.8	13.7	132.36	0.0	47.4	1,071.8	1,043.0	28.80	37.210	
6,400.0	6,273.6	6,273.6	6,273.6	23.9	14.0	132.36	0.0	47.4	1,071.8	1,042.6	29.22	36.681	
6,500.0	6,373.6	6,373.6	6,373.6	24.0	14.2	132.36	0.0	47.4	1,071.8	1,042.1	29.64	36.166	
6,600.0	6,473.6	6,473.6	6,473.6	24.1	14.4	132.36	0.0	47.4	1,071.8	1,041.7	30.05	35.664	
6,700.0	6,573.6	6,573.6	6,573.6	24.3	14.6	132.36	0.0	47.4	1,071.8	1,041.3	30.47	35.175	
6,800.0	6,673.6	6,673.6	6,673.6	24.4	14.9	132.36	0.0	47.4	1,071.8	1,040.9	30.89	34.698	
6,900.0	6,773.6	6,773.6	6,773.6	24.5	15.1	132.36	0.0	47.4	1,071.8	1,040.5	31.31	34.233	
7,000.0	6,873.6	6,873.6	6,873.6	24.7	15.3	132.36	0.0	47.4	1,071.8	1,040.1	31.73	33.779	
7,090.4	6,964.0	6,964.0	6,964.0	24.8	15.5	132.36	0.0	47.4	1,071.8	1,039.7	32.11	33.379	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Lang C22-28D
Project:	SEC.22-T4N-R64W	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Reference Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM den0-adp01 Server Data
Reference Design:	Noble Lang C22-28D Plan #1 (05-04-10)	Offset TVD Reference:	Offset Datum

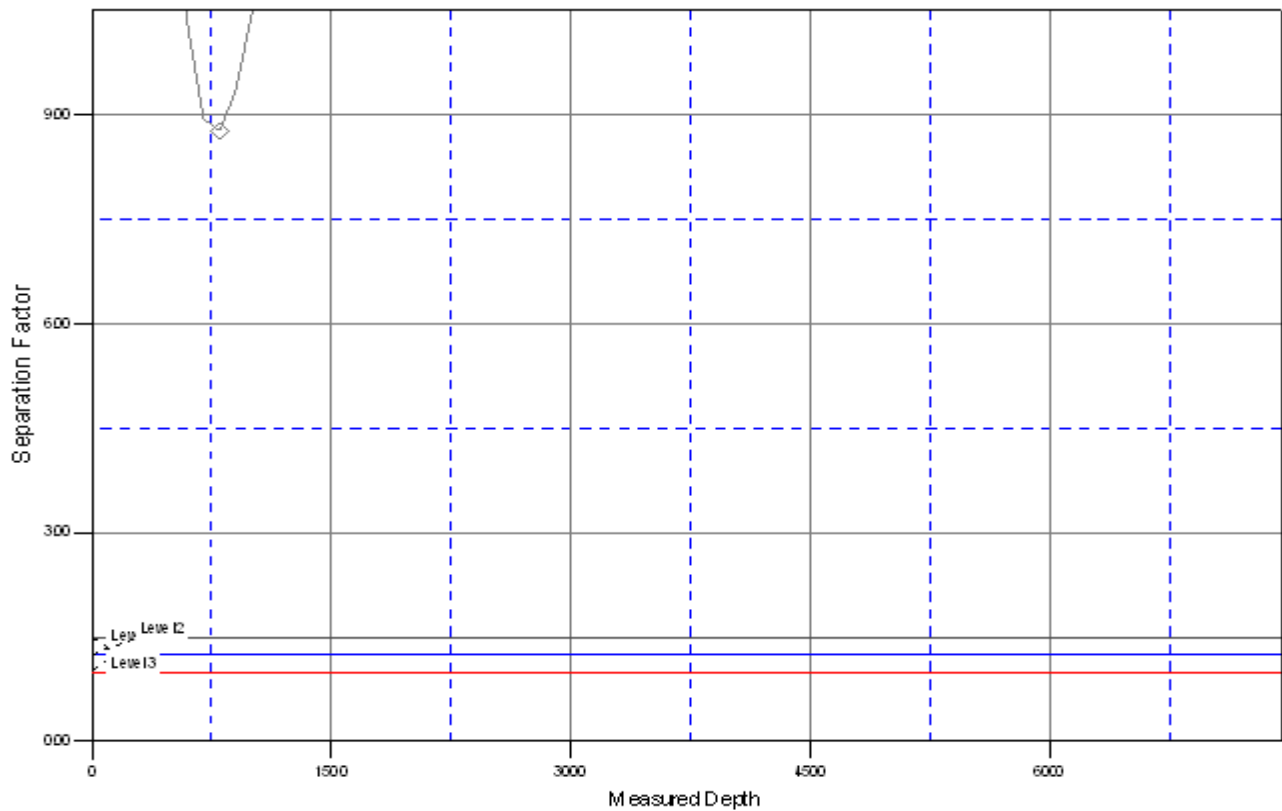
Reference Depths are relative to WELL @ 4669.0ft (Original Well Elev) Coordinates are relative to: Lang C22-28D
 Offset Depths are relative to Offset Datum
 Central Meridian is 105° 30' 0.000 W °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.62°



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Lang C22-28D
Project:	SEC.22-T4N-R64W	TVD Reference:	WELL @ 4669.0ft (Original Well Elev)
Reference Site:	Coleman C22-18D Pad Sec.22-T4N-R64W	MD Reference:	WELL @ 4669.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lang C22-28D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM den0-adp01 Server Data
Reference Design:	Noble Lang C22-28D Plan #1 (05-04-10)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4669.0ft (Original Well Elev) Coordinates are relative to: Lang C22-28D
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.62°

Separation Factor Plot



LEGEND

ar C22-18 D Plan #1 (05-03-10) \V0 ✖ Volkens 31-22 (Exist), Wellbore #1, Design #1 \V0