ENSIGN Directional

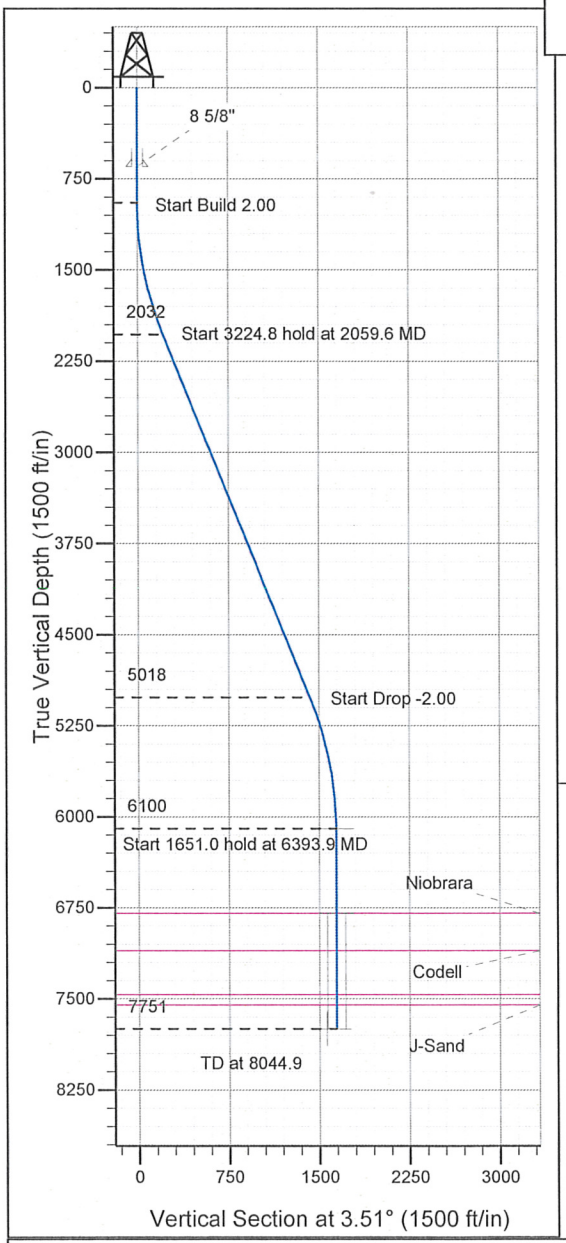
Well Name: **Moser PC H22-21D**

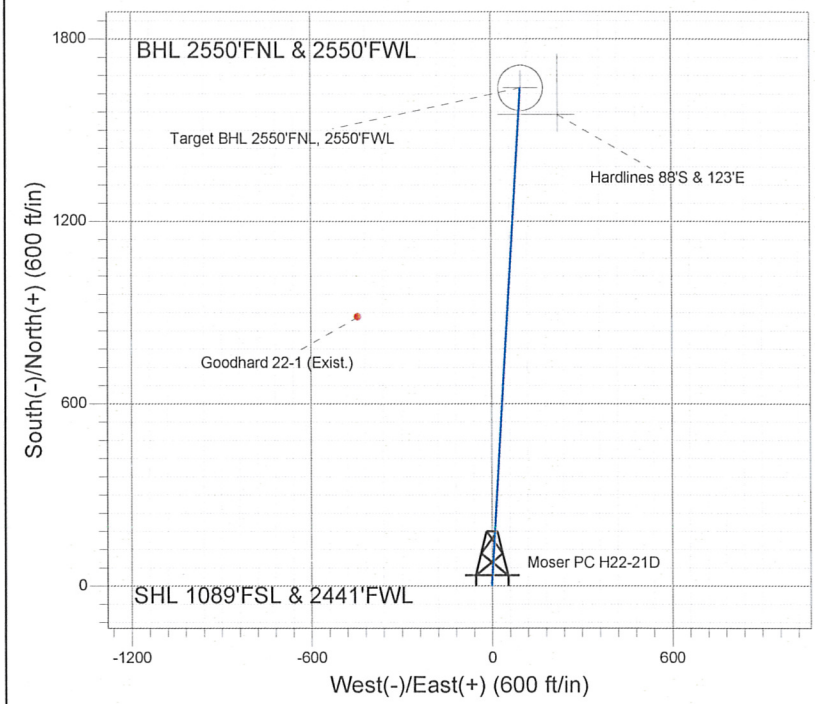
Surface Location: Moser PC H22-21D Pad Sec.22-T3N-65W
North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4808.0

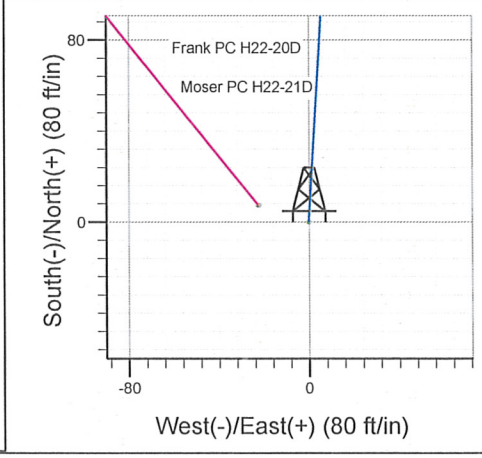
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1319261.27	3237248.93	40° 12' 23.940 N	104° 39' 2.016 W	

Original Well EleWELL @ 4821.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO







Moser PC H22-21D Pad Sec.22-T3N-65W
Moser PC H22-21D
Noble Moser PC H22-21D Plan#2 (9-22-10)
15:34, September 24 2010

Azimuths to True North
Magnetic North: 8.88°

Magnetic Field
Strength: 53119.0snT
Dip Angle: 66.94°
Date: 9/23/2010
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Target BHL 2550'FNL, 2550'FWL	6100.0	1639.4	100.5	40° 12' 40.140 N	104° 39' 0.720 W	Point
Target Circle 2550'FNL, 2550'FWL	6797.0	1639.4	100.5	40° 12' 40.140 N	104° 39' 0.720 W	Circle (Radius: 75.0)
Hardlines 88'S & 123'E	7751.0	1551.4	223.5	40° 12' 39.271 N	104° 38' 59.135 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	950.0	0.00	0.00	950.0	0.0	0.0	0.00	0.00	0.0	
3	2059.6	22.19	3.51	2032.1	211.8	13.0	2.00	3.51	212.2	
4	5284.4	22.19	3.51	5017.9	1427.6	87.6	0.00	0.00	1430.2	
5	6393.9	0.00	0.00	6100.0	1639.4	100.5	2.00	180.00	1642.4	Target BHL 2550'FNL, 2550'FWL
6	8044.9	0.00	0.00	7751.0	1639.4	100.5	0.00	0.00	1642.4	

ENSIGN
Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.22-T3N-R65W
Moser PC H22-21D Pad Sec.22-T3N-65W
Moser PC H22-21D

Wellbore #1

Plan: Noble Moser PC H22-21D Plan#2 (9-22-10)

Standard Planning Report

24 September, 2010

noble energy

Database:	Landmark	**Local Co-ordinate Reference:**	Well Moser PC H22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.22-T3N-R65W	**MD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Site:	Moser PC H22-21D Pad Sec.22-T3N-65W	**North Reference:**	True
Well:	Moser PC H22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Moser PC H22-21D Plan#2 (9-22-10)		

Project SEC.22-T3N-R65W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Moser PC H22-21D Pad Sec.22-T3N-65W

Site Position:		**Northing:**	1,319,261.29 ft	**Latitude:**	40° 12' 23.940 N
From:	Lat/Long	**Easting:**	3,237,248.93 ft	**Longitude:**	104° 39' 2.016 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.55 °

Well Moser PC H22-21D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,319,261.27 ft	**Latitude:**	40° 12' 23.940 N
	+E/-W	0.0 ft	**Easting:**	3,237,248.93 ft	**Longitude:**	104° 39' 2.016 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,808.0 ft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	9/23/2010	8.88	66.94	53,119

Design Noble Moser PC H22-21D Plan#2 (9-22-10)

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	3.51

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	
950.0	0.00	0.00	950.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,059.6	22.19	3.51	2,032.1	211.8	13.0	2.00	2.00	0.00	3.51	
5,284.4	22.19	3.51	5,017.9	1,427.6	87.6	0.00	0.00	0.00	0.00	
6,393.9	0.00	0.00	6,100.0	1,639.4	100.5	2.00	-2.00	0.00	180.00	Target BHL 2550'FI
8,044.9	0.00	0.00	7,751.0	1,639.4	100.5	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Moser PC H22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.22-T3N-R65W	**MD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Site:	Moser PC H22-21D Pad Sec.22-T3N-65W	**North Reference:**	True
Well:	Moser PC H22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Moser PC H22-21D Plan#2 (9-22-10)		

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
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
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
950.0	0.00	0.00	950.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.20	3.51	960.0	0.0	0.0	0.0	2.00	2.00	0.00
1,000.0	1.00	3.51	1,000.0	0.4	0.0	0.4	2.00	2.00	0.00
1,040.0	1.80	3.51	1,040.0	1.4	0.1	1.4	2.00	2.00	0.00
1,080.0	2.60	3.51	1,080.0	2.9	0.2	2.9	2.00	2.00	0.00
1,120.0	3.40	3.51	1,119.9	5.0	0.3	5.0	2.00	2.00	0.00
1,160.0	4.20	3.51	1,159.8	7.7	0.5	7.7	2.00	2.00	0.00
1,200.0	5.00	3.51	1,199.7	10.9	0.7	10.9	2.00	2.00	0.00
1,240.0	5.80	3.51	1,239.5	14.6	0.9	14.7	2.00	2.00	0.00
1,280.0	6.60	3.51	1,279.3	19.0	1.2	19.0	2.00	2.00	0.00
1,320.0	7.40	3.51	1,319.0	23.8	1.5	23.9	2.00	2.00	0.00
1,360.0	8.20	3.51	1,358.6	29.2	1.8	29.3	2.00	2.00	0.00
1,400.0	9.00	3.51	1,398.2	35.2	2.2	35.3	2.00	2.00	0.00
1,440.0	9.80	3.51	1,437.6	41.7	2.6	41.8	2.00	2.00	0.00
1,480.0	10.60	3.51	1,477.0	48.8	3.0	48.9	2.00	2.00	0.00
1,520.0	11.40	3.51	1,516.2	56.4	3.5	56.5	2.00	2.00	0.00
1,560.0	12.20	3.51	1,555.4	64.6	4.0	64.7	2.00	2.00	0.00
1,600.0	13.00	3.51	1,594.4	73.3	4.5	73.4	2.00	2.00	0.00
1,640.0	13.80	3.51	1,633.3	82.5	5.1	82.7	2.00	2.00	0.00
1,680.0	14.60	3.51	1,672.1	92.3	5.7	92.5	2.00	2.00	0.00
1,720.0	15.40	3.51	1,710.8	102.7	6.3	102.9	2.00	2.00	0.00
1,760.0	16.20	3.51	1,749.3	113.5	7.0	113.8	2.00	2.00	0.00
1,800.0	17.00	3.51	1,787.6	124.9	7.7	125.2	2.00	2.00	0.00
1,840.0	17.80	3.51	1,825.8	136.9	8.4	137.1	2.00	2.00	0.00
1,880.0	18.60	3.51	1,863.8	149.4	9.2	149.6	2.00	2.00	0.00
1,920.0	19.40	3.51	1,901.6	162.4	10.0	162.7	2.00	2.00	0.00
1,960.0	20.20	3.51	1,939.2	175.9	10.8	176.2	2.00	2.00	0.00
2,000.0	21.00	3.51	1,976.6	189.9	11.6	190.3	2.00	2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Moser PC H22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.22-T3N-R65W	**MD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Site:	Moser PC H22-21D Pad Sec.22-T3N-65W	**North Reference:**	True
Well:	Moser PC H22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Moser PC H22-21D Plan#2 (9-22-10)		

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)
2,040.0	21.80	3.51	2,013.9	204.5	12.5	204.9	2.00	2.00	0.00
2,059.6	22.19	3.51	2,032.1	211.8	13.0	212.2	2.00	2.00	0.00
2,080.0	22.19	3.51	2,051.0	219.5	13.5	219.9	0.00	0.00	0.00
2,120.0	22.19	3.51	2,088.0	234.6	14.4	235.0	0.00	0.00	0.00
2,160.0	22.19	3.51	2,125.0	249.7	15.3	250.1	0.00	0.00	0.00
2,200.0	22.19	3.51	2,162.1	264.7	16.2	265.2	0.00	0.00	0.00
2,240.0	22.19	3.51	2,199.1	279.8	17.2	280.4	0.00	0.00	0.00
2,280.0	22.19	3.51	2,236.1	294.9	18.1	295.5	0.00	0.00	0.00
2,320.0	22.19	3.51	2,273.2	310.0	19.0	310.6	0.00	0.00	0.00
2,360.0	22.19	3.51	2,310.2	325.1	19.9	325.7	0.00	0.00	0.00
2,400.0	22.19	3.51	2,347.2	340.1	20.9	340.8	0.00	0.00	0.00
2,440.0	22.19	3.51	2,384.3	355.2	21.8	355.9	0.00	0.00	0.00
2,480.0	22.19	3.51	2,421.3	370.3	22.7	371.0	0.00	0.00	0.00
2,520.0	22.19	3.51	2,458.4	385.4	23.6	386.1	0.00	0.00	0.00
2,560.0	22.19	3.51	2,495.4	400.5	24.6	401.2	0.00	0.00	0.00
2,600.0	22.19	3.51	2,532.4	415.5	25.5	416.3	0.00	0.00	0.00
2,640.0	22.19	3.51	2,569.5	430.6	26.4	431.4	0.00	0.00	0.00
2,680.0	22.19	3.51	2,606.5	445.7	27.3	446.5	0.00	0.00	0.00
2,720.0	22.19	3.51	2,643.5	460.8	28.3	461.7	0.00	0.00	0.00
2,760.0	22.19	3.51	2,680.6	475.9	29.2	476.8	0.00	0.00	0.00
2,800.0	22.19	3.51	2,717.6	490.9	30.1	491.9	0.00	0.00	0.00
2,840.0	22.19	3.51	2,754.7	506.0	31.0	507.0	0.00	0.00	0.00
2,880.0	22.19	3.51	2,791.7	521.1	32.0	522.1	0.00	0.00	0.00
2,920.0	22.19	3.51	2,828.7	536.2	32.9	537.2	0.00	0.00	0.00
2,960.0	22.19	3.51	2,865.8	551.3	33.8	552.3	0.00	0.00	0.00
3,000.0	22.19	3.51	2,902.8	566.3	34.7	567.4	0.00	0.00	0.00
3,040.0	22.19	3.51	2,939.8	581.4	35.7	582.5	0.00	0.00	0.00
3,080.0	22.19	3.51	2,976.9	596.5	36.6	597.6	0.00	0.00	0.00
3,120.0	22.19	3.51	3,013.9	611.6	37.5	612.7	0.00	0.00	0.00
3,160.0	22.19	3.51	3,051.0	626.7	38.4	627.8	0.00	0.00	0.00
3,200.0	22.19	3.51	3,088.0	641.7	39.4	643.0	0.00	0.00	0.00
3,240.0	22.19	3.51	3,125.0	656.8	40.3	658.1	0.00	0.00	0.00
3,280.0	22.19	3.51	3,162.1	671.9	41.2	673.2	0.00	0.00	0.00
3,320.0	22.19	3.51	3,199.1	687.0	42.1	688.3	0.00	0.00	0.00
3,360.0	22.19	3.51	3,236.1	702.1	43.1	703.4	0.00	0.00	0.00
3,400.0	22.19	3.51	3,273.2	717.1	44.0	718.5	0.00	0.00	0.00
3,440.0	22.19	3.51	3,310.2	732.2	44.9	733.6	0.00	0.00	0.00
3,480.0	22.19	3.51	3,347.2	747.3	45.8	748.7	0.00	0.00	0.00
3,520.0	22.19	3.51	3,384.3	762.4	46.8	763.8	0.00	0.00	0.00
3,560.0	22.19	3.51	3,421.3	777.5	47.7	778.9	0.00	0.00	0.00
3,600.0	22.19	3.51	3,458.4	792.5	48.6	794.0	0.00	0.00	0.00
3,640.0	22.19	3.51	3,495.4	807.6	49.5	809.1	0.00	0.00	0.00
3,680.0	22.19	3.51	3,532.4	822.7	50.5	824.3	0.00	0.00	0.00
3,720.0	22.19	3.51	3,569.5	837.8	51.4	839.4	0.00	0.00	0.00
3,760.0	22.19	3.51	3,606.5	852.9	52.3	854.5	0.00	0.00	0.00
3,800.0	22.19	3.51	3,643.5	867.9	53.2	869.6	0.00	0.00	0.00
3,840.0	22.19	3.51	3,680.6	883.0	54.2	884.7	0.00	0.00	0.00
3,880.0	22.19	3.51	3,717.6	898.1	55.1	899.8	0.00	0.00	0.00
3,920.0	22.19	3.51	3,754.7	913.2	56.0	914.9	0.00	0.00	0.00
3,960.0	22.19	3.51	3,791.7	928.3	56.9	930.0	0.00	0.00	0.00
4,000.0	22.19	3.51	3,828.7	943.3	57.9	945.1	0.00	0.00	0.00
4,040.0	22.19	3.51	3,865.8	958.4	58.8	960.2	0.00	0.00	0.00
4,080.0	22.19	3.51	3,902.8	973.5	59.7	975.3	0.00	0.00	0.00
4,120.0	22.19	3.51	3,939.8	988.6	60.6	990.4	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Moser PC H22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.22-T3N-R65W	**MD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Site:	Moser PC H22-21D Pad Sec.22-T3N-65W	**North Reference:**	True
Well:	Moser PC H22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Moser PC H22-21D Plan#2 (9-22-10)		

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	22.19	3.51	3,976.9	1,003.7	61.6	1,005.6	0.00	0.00	0.00
4,200.0	22.19	3.51	4,013.9	1,018.7	62.5	1,020.7	0.00	0.00	0.00
4,240.0	22.19	3.51	4,050.9	1,033.8	63.4	1,035.8	0.00	0.00	0.00
4,280.0	22.19	3.51	4,088.0	1,048.9	64.3	1,050.9	0.00	0.00	0.00
4,320.0	22.19	3.51	4,125.0	1,064.0	65.3	1,066.0	0.00	0.00	0.00
4,360.0	22.19	3.51	4,162.1	1,079.1	66.2	1,081.1	0.00	0.00	0.00
4,400.0	22.19	3.51	4,199.1	1,094.2	67.1	1,096.2	0.00	0.00	0.00
4,440.0	22.19	3.51	4,236.1	1,109.2	68.0	1,111.3	0.00	0.00	0.00
4,480.0	22.19	3.51	4,273.2	1,124.3	69.0	1,126.4	0.00	0.00	0.00
4,520.0	22.19	3.51	4,310.2	1,139.4	69.9	1,141.5	0.00	0.00	0.00
4,560.0	22.19	3.51	4,347.2	1,154.5	70.8	1,156.6	0.00	0.00	0.00
4,600.0	22.19	3.51	4,384.3	1,169.6	71.7	1,171.7	0.00	0.00	0.00
4,640.0	22.19	3.51	4,421.3	1,184.6	72.7	1,186.9	0.00	0.00	0.00
4,680.0	22.19	3.51	4,458.4	1,199.7	73.6	1,202.0	0.00	0.00	0.00
4,720.0	22.19	3.51	4,495.4	1,214.8	74.5	1,217.1	0.00	0.00	0.00
4,760.0	22.19	3.51	4,532.4	1,229.9	75.4	1,232.2	0.00	0.00	0.00
4,800.0	22.19	3.51	4,569.5	1,245.0	76.4	1,247.3	0.00	0.00	0.00
4,840.0	22.19	3.51	4,606.5	1,260.0	77.3	1,262.4	0.00	0.00	0.00
4,880.0	22.19	3.51	4,643.5	1,275.1	78.2	1,277.5	0.00	0.00	0.00
4,920.0	22.19	3.51	4,680.6	1,290.2	79.1	1,292.6	0.00	0.00	0.00
4,960.0	22.19	3.51	4,717.6	1,305.3	80.1	1,307.7	0.00	0.00	0.00
5,000.0	22.19	3.51	4,754.7	1,320.4	81.0	1,322.8	0.00	0.00	0.00
5,040.0	22.19	3.51	4,791.7	1,335.4	81.9	1,337.9	0.00	0.00	0.00
5,080.0	22.19	3.51	4,828.7	1,350.5	82.8	1,353.0	0.00	0.00	0.00
5,120.0	22.19	3.51	4,865.8	1,365.6	83.8	1,368.2	0.00	0.00	0.00
5,160.0	22.19	3.51	4,902.8	1,380.7	84.7	1,383.3	0.00	0.00	0.00
5,200.0	22.19	3.51	4,939.8	1,395.8	85.6	1,398.4	0.00	0.00	0.00
5,240.0	22.19	3.51	4,976.9	1,410.8	86.5	1,413.5	0.00	0.00	0.00
5,280.0	22.19	3.51	5,013.9	1,425.9	87.5	1,428.6	0.00	0.00	0.00
5,284.4	22.19	3.51	5,017.9	1,427.6	87.6	1,430.2	0.00	0.00	0.00
5,320.0	21.48	3.51	5,051.0	1,440.8	88.4	1,443.5	2.00	-2.00	0.00
5,360.0	20.68	3.51	5,088.4	1,455.1	89.2	1,457.9	2.00	-2.00	0.00
5,400.0	19.88	3.51	5,125.9	1,469.0	90.1	1,471.7	2.00	-2.00	0.00
5,440.0	19.08	3.51	5,163.6	1,482.3	90.9	1,485.1	2.00	-2.00	0.00
5,480.0	18.28	3.51	5,201.5	1,495.1	91.7	1,497.9	2.00	-2.00	0.00
5,520.0	17.48	3.51	5,239.5	1,507.3	92.4	1,510.2	2.00	-2.00	0.00
5,560.0	16.68	3.51	5,277.8	1,519.1	93.2	1,521.9	2.00	-2.00	0.00
5,600.0	15.88	3.51	5,316.2	1,530.3	93.9	1,533.1	2.00	-2.00	0.00
5,640.0	15.08	3.51	5,354.7	1,540.9	94.5	1,543.8	2.00	-2.00	0.00
5,680.0	14.28	3.51	5,393.4	1,551.0	95.1	1,553.9	2.00	-2.00	0.00
5,720.0	13.48	3.51	5,432.3	1,560.6	95.7	1,563.5	2.00	-2.00	0.00
5,760.0	12.68	3.51	5,471.2	1,569.6	96.3	1,572.6	2.00	-2.00	0.00
5,800.0	11.88	3.51	5,510.3	1,578.1	96.8	1,581.1	2.00	-2.00	0.00
5,840.0	11.08	3.51	5,549.5	1,586.1	97.3	1,589.1	2.00	-2.00	0.00
5,880.0	10.28	3.51	5,588.8	1,593.5	97.7	1,596.5	2.00	-2.00	0.00
5,920.0	9.48	3.51	5,628.2	1,600.3	98.2	1,603.3	2.00	-2.00	0.00
5,960.0	8.68	3.51	5,667.7	1,606.6	98.5	1,609.6	2.00	-2.00	0.00
6,000.0	7.88	3.51	5,707.3	1,612.4	98.9	1,615.4	2.00	-2.00	0.00
6,040.0	7.08	3.51	5,747.0	1,617.6	99.2	1,620.6	2.00	-2.00	0.00
6,080.0	6.28	3.51	5,786.7	1,622.2	99.5	1,625.3	2.00	-2.00	0.00
6,120.0	5.48	3.51	5,826.5	1,626.3	99.7	1,629.4	2.00	-2.00	0.00
6,160.0	4.68	3.51	5,866.3	1,629.8	100.0	1,632.9	2.00	-2.00	0.00
6,200.0	3.88	3.51	5,906.2	1,632.8	100.1	1,635.9	2.00	-2.00	0.00
6,240.0	3.08	3.51	5,946.1	1,635.2	100.3	1,638.3	2.00	-2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Moser PC H22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.22-T3N-R65W	**MD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Site:	Moser PC H22-21D Pad Sec.22-T3N-65W	**North Reference:**	True
Well:	Moser PC H22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Moser PC H22-21D Plan#2 (9-22-10)		

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)
6,280.0	2.28	3.51	5,986.1	1,637.1	100.4	1,640.2	2.00	-2.00	0.00
6,320.0	1.48	3.51	6,026.1	1,638.4	100.5	1,641.5	2.00	-2.00	0.00
6,360.0	0.68	3.51	6,066.1	1,639.2	100.5	1,642.2	2.00	-2.00	0.00
6,393.9	0.00	0.00	6,100.0	1,639.4	100.5	1,642.4	2.00	-2.00	-10.34
Target BHL 2550'FNL, 2550'FWL									
6,400.0	0.00	0.00	6,106.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,440.0	0.00	0.00	6,146.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,480.0	0.00	0.00	6,186.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,520.0	0.00	0.00	6,226.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,560.0	0.00	0.00	6,266.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,306.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,640.0	0.00	0.00	6,346.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,680.0	0.00	0.00	6,386.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,720.0	0.00	0.00	6,426.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,760.0	0.00	0.00	6,466.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,506.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,840.0	0.00	0.00	6,546.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,880.0	0.00	0.00	6,586.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,920.0	0.00	0.00	6,626.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
6,960.0	0.00	0.00	6,666.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,706.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,040.0	0.00	0.00	6,746.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,080.0	0.00	0.00	6,786.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,090.9	0.00	0.00	6,797.0	1,639.4	100.5	1,642.4	0.00	0.00	0.00
Niobrara - Target Circle 2550'FNL, 2550'FWL									
7,120.0	0.00	0.00	6,826.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,160.0	0.00	0.00	6,866.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,200.0	0.00	0.00	6,906.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,240.0	0.00	0.00	6,946.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,280.0	0.00	0.00	6,986.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,320.0	0.00	0.00	7,026.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,360.0	0.00	0.00	7,066.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,396.9	0.00	0.00	7,103.0	1,639.4	100.5	1,642.4	0.00	0.00	0.00
Codell									
7,400.0	0.00	0.00	7,106.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,440.0	0.00	0.00	7,146.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,480.0	0.00	0.00	7,186.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,520.0	0.00	0.00	7,226.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,560.0	0.00	0.00	7,266.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,600.0	0.00	0.00	7,306.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,640.0	0.00	0.00	7,346.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,680.0	0.00	0.00	7,386.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,720.0	0.00	0.00	7,426.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,759.9	0.00	0.00	7,466.0	1,639.4	100.5	1,642.4	0.00	0.00	0.00
D-Sand									
7,760.0	0.00	0.00	7,466.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,800.0	0.00	0.00	7,506.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,840.0	0.00	0.00	7,546.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,844.9	0.00	0.00	7,551.0	1,639.4	100.5	1,642.4	0.00	0.00	0.00
J-Sand									
7,880.0	0.00	0.00	7,586.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,920.0	0.00	0.00	7,626.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
7,960.0	0.00	0.00	7,666.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
8,000.0	0.00	0.00	7,706.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Moser PC H22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.22-T3N-R65W	**MD Reference:**	WELL @ 4821.0ft (Original Well Elev)
Site:	Moser PC H22-21D Pad Sec.22-T3N-65W	**North Reference:**	True
Well:	Moser PC H22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Moser PC H22-21D Plan#2 (9-22-10)		

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)
8,040.0	0.00	0.00	7,746.1	1,639.4	100.5	1,642.4	0.00	0.00	0.00
8,044.9	0.00	0.00	7,751.0	1,639.4	100.5	1,642.4	0.00	0.00	0.00
Hardlines 88'S & 123'E									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Target Circle 2550'FN - plan hits target - Circle (radius 75.0)	0.00	0.00	6,797.0	1,639.4	100.5	1,320,901.45	3,237,333.76	40° 12' 40.140 N	104° 39' 0.720 W
Target BHL 2550'FNL - plan hits target - Point	0.00	0.00	6,100.0	1,639.4	100.5	1,320,901.45	3,237,333.76	40° 12' 40.140 N	104° 39' 0.720 W
Hardlines 88'S & 123'I	0.00	0.00	7,751.0	1,551.4	223.5	1,320,814.67	3,237,457.56	40° 12' 39.271 N	104° 38' 59.135 W
- plan misses by 151.2ft at 8044.9ft MD (7751.0 TVD, 1639.4 N, 100.5 E) - Polygon									
Point 1			7,751.0	0.0	0.0	1,320,814.67	3,237,457.56		
Point 2			7,751.0	0.0	-200.0	1,320,812.76	3,237,257.58		
Point 3			7,751.0	0.0	0.0	1,320,814.67	3,237,457.56		
Point 4			7,751.0	200.0	0.0	1,321,014.65	3,237,455.64		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
650.0	650.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,090.9	6,797.0	Niobrara		0.00	
7,396.9	7,103.0	Codell		0.00	
7,759.9	7,466.0	D-Sand		0.00	
7,844.9	7,551.0	J-Sand		0.00	