

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	25.5	0.0	0.00	0.00	0.0	
2	1100.0	0.00	0.00	1100.0	25.5	0.0	0.00	0.00	0.0	
3	1606.7	10.13	9.79	1604.1	69.5	7.6	2.00	9.79	44.7	
4	4544.4	10.13	9.79	4495.9	578.9	95.5	0.00	0.00	561.6	
5	5051.1	0.00	0.00	5000.0	623.0	103.1	2.00	180.00	606.3	TARGET BHL 75'FNL, 75'FEL
6	7105.1	0.00	0.00	7054.0	623.0	103.1	0.00	0.00	606.3	



Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.24-T5N-R65W

McCauley B19-31D Pad Sec.24-T5N-R65W

McCauley B19-30D

Wellbore #1

Plan: Noble McCauley B19-30D Plan #1 (12-09-10)

Standard Planning Report

14 December, 2010



Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-30D Plan #1 (12-09-10)		

Project	SEC.24-T5N-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	McCauley B19-31D Pad Sec.24-T5N-R65W				
Site Position:		Northing:	1,386,157.02 ft	Latitude:	40° 23' 23.748 N
From:	Lat/Long	Easting:	3,249,990.34 ft	Longitude:	104° 36' 9.072 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.58 °

Well	McCauley B19-30D					
Well Position	+N/-S	25.5 ft	Northing:	1,386,182.50 ft	Latitude:	40° 23' 24.000 N
	+E/-W	0.0 ft	Easting:	3,249,990.08 ft	Longitude:	104° 36' 9.072 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,631.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/9/2010	8.85	67.09	53,200

Design	Noble McCauley B19-30D Plan #1 (12-09-10)			
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	25.5	0.0	9.79

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	25.5	0.0	0.00	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	25.5	0.0	0.00	0.00	0.00	0.00	
1,606.7	10.13	9.79	1,604.1	69.5	7.6	2.00	2.00	0.00	9.79	
4,544.4	10.13	9.79	4,495.9	578.9	95.5	0.00	0.00	0.00	0.00	
5,051.1	0.00	0.00	5,000.0	623.0	103.1	2.00	-2.00	0.00	180.00	TARGET BHL 75'FI
7,105.1	0.00	0.00	7,054.0	623.0	103.1	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-30D Plan #1 (12-09-10)		

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	25.5	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	25.5	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	25.5	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	25.5	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	25.5	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	25.5	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	25.5	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	25.5	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	25.5	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	25.5	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	25.5	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	25.5	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	25.5	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	25.5	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	25.5	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	25.5	0.0	0.0	0.00	0.00	0.00
8 5/8"									
640.0	0.00	0.00	640.0	25.5	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	25.5	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	25.5	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	25.5	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	25.5	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	25.5	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	25.5	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	25.5	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	25.5	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	25.5	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	25.5	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	25.5	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	25.5	0.0	0.0	0.00	0.00	0.00
1,120.0	0.40	9.79	1,120.0	25.6	0.0	0.1	2.00	2.00	0.00
1,160.0	1.20	9.79	1,160.0	26.1	0.1	0.6	2.00	2.00	0.00
1,200.0	2.00	9.79	1,200.0	27.2	0.3	1.7	2.00	2.00	0.00
1,240.0	2.80	9.79	1,239.9	28.9	0.6	3.4	2.00	2.00	0.00
1,280.0	3.60	9.79	1,279.9	31.1	1.0	5.7	2.00	2.00	0.00
1,320.0	4.40	9.79	1,319.8	33.8	1.4	8.4	2.00	2.00	0.00
1,360.0	5.20	9.79	1,359.6	37.1	2.0	11.8	2.00	2.00	0.00
1,400.0	6.00	9.79	1,399.5	41.0	2.7	15.7	2.00	2.00	0.00
1,440.0	6.80	9.79	1,439.2	45.3	3.4	20.2	2.00	2.00	0.00
1,480.0	7.60	9.79	1,478.9	50.3	4.3	25.2	2.00	2.00	0.00
1,520.0	8.40	9.79	1,518.5	55.8	5.2	30.7	2.00	2.00	0.00
1,560.0	9.20	9.79	1,558.0	61.8	6.3	36.9	2.00	2.00	0.00
1,600.0	10.00	9.79	1,597.5	68.4	7.4	43.5	2.00	2.00	0.00
1,606.7	10.13	9.79	1,604.1	69.5	7.6	44.7	2.00	2.00	0.00
1,640.0	10.13	9.79	1,636.8	75.3	8.6	50.6	0.00	0.00	0.00
1,680.0	10.13	9.79	1,676.2	82.2	9.8	57.6	0.00	0.00	0.00
1,720.0	10.13	9.79	1,715.6	89.2	11.0	64.6	0.00	0.00	0.00
1,760.0	10.13	9.79	1,755.0	96.1	12.2	71.7	0.00	0.00	0.00
1,800.0	10.13	9.79	1,794.3	103.1	13.4	78.7	0.00	0.00	0.00
1,840.0	10.13	9.79	1,833.7	110.0	14.6	85.7	0.00	0.00	0.00
1,880.0	10.13	9.79	1,873.1	116.9	15.8	92.8	0.00	0.00	0.00
1,920.0	10.13	9.79	1,912.5	123.9	17.0	99.8	0.00	0.00	0.00
1,960.0	10.13	9.79	1,951.8	130.8	18.2	106.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-30D Plan #1 (12-09-10)		

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	10.13	9.79	1,991.2	137.7	19.4	113.9	0.00	0.00	0.00
2,040.0	10.13	9.79	2,030.6	144.7	20.6	120.9	0.00	0.00	0.00
2,080.0	10.13	9.79	2,070.0	151.6	21.8	128.0	0.00	0.00	0.00
2,120.0	10.13	9.79	2,109.4	158.5	23.0	135.0	0.00	0.00	0.00
2,160.0	10.13	9.79	2,148.7	165.5	24.1	142.1	0.00	0.00	0.00
2,200.0	10.13	9.79	2,188.1	172.4	25.3	149.1	0.00	0.00	0.00
2,240.0	10.13	9.79	2,227.5	179.3	26.5	156.1	0.00	0.00	0.00
2,280.0	10.13	9.79	2,266.9	186.3	27.7	163.2	0.00	0.00	0.00
2,320.0	10.13	9.79	2,306.2	193.2	28.9	170.2	0.00	0.00	0.00
2,360.0	10.13	9.79	2,345.6	200.2	30.1	177.2	0.00	0.00	0.00
2,400.0	10.13	9.79	2,385.0	207.1	31.3	184.3	0.00	0.00	0.00
2,440.0	10.13	9.79	2,424.4	214.0	32.5	191.3	0.00	0.00	0.00
2,480.0	10.13	9.79	2,463.7	221.0	33.7	198.4	0.00	0.00	0.00
2,520.0	10.13	9.79	2,503.1	227.9	34.9	205.4	0.00	0.00	0.00
2,560.0	10.13	9.79	2,542.5	234.8	36.1	212.4	0.00	0.00	0.00
2,600.0	10.13	9.79	2,581.9	241.8	37.3	219.5	0.00	0.00	0.00
2,640.0	10.13	9.79	2,621.2	248.7	38.5	226.5	0.00	0.00	0.00
2,680.0	10.13	9.79	2,660.6	255.6	39.7	233.6	0.00	0.00	0.00
2,720.0	10.13	9.79	2,700.0	262.6	40.9	240.6	0.00	0.00	0.00
2,760.0	10.13	9.79	2,739.4	269.5	42.1	247.6	0.00	0.00	0.00
2,800.0	10.13	9.79	2,778.7	276.5	43.3	254.7	0.00	0.00	0.00
2,840.0	10.13	9.79	2,818.1	283.4	44.5	261.7	0.00	0.00	0.00
2,880.0	10.13	9.79	2,857.5	290.3	45.7	268.7	0.00	0.00	0.00
2,920.0	10.13	9.79	2,896.9	297.3	46.9	275.8	0.00	0.00	0.00
2,960.0	10.13	9.79	2,936.2	304.2	48.1	282.8	0.00	0.00	0.00
3,000.0	10.13	9.79	2,975.6	311.1	49.3	289.9	0.00	0.00	0.00
3,040.0	10.13	9.79	3,015.0	318.1	50.5	296.9	0.00	0.00	0.00
3,080.0	10.13	9.79	3,054.4	325.0	51.7	303.9	0.00	0.00	0.00
3,120.0	10.13	9.79	3,093.8	331.9	52.9	311.0	0.00	0.00	0.00
3,160.0	10.13	9.79	3,133.1	338.9	54.1	318.0	0.00	0.00	0.00
3,200.0	10.13	9.79	3,172.5	345.8	55.3	325.1	0.00	0.00	0.00
3,240.0	10.13	9.79	3,211.9	352.7	56.5	332.1	0.00	0.00	0.00
3,280.0	10.13	9.79	3,251.3	359.7	57.6	339.1	0.00	0.00	0.00
3,320.0	10.13	9.79	3,290.6	366.6	58.8	346.2	0.00	0.00	0.00
3,360.0	10.13	9.79	3,330.0	373.6	60.0	353.2	0.00	0.00	0.00
3,400.0	10.13	9.79	3,369.4	380.5	61.2	360.2	0.00	0.00	0.00
3,440.0	10.13	9.79	3,408.8	387.4	62.4	367.3	0.00	0.00	0.00
3,480.0	10.13	9.79	3,448.1	394.4	63.6	374.3	0.00	0.00	0.00
3,520.0	10.13	9.79	3,487.5	401.3	64.8	381.4	0.00	0.00	0.00
3,560.0	10.13	9.79	3,526.9	408.2	66.0	388.4	0.00	0.00	0.00
3,600.0	10.13	9.79	3,566.3	415.2	67.2	395.4	0.00	0.00	0.00
3,640.0	10.13	9.79	3,605.6	422.1	68.4	402.5	0.00	0.00	0.00
3,680.0	10.13	9.79	3,645.0	429.0	69.6	409.5	0.00	0.00	0.00
3,720.0	10.13	9.79	3,684.4	436.0	70.8	416.6	0.00	0.00	0.00
3,760.0	10.13	9.79	3,723.8	442.9	72.0	423.6	0.00	0.00	0.00
3,800.0	10.13	9.79	3,763.1	449.8	73.2	430.6	0.00	0.00	0.00
3,840.0	10.13	9.79	3,802.5	456.8	74.4	437.7	0.00	0.00	0.00
3,880.0	10.13	9.79	3,841.9	463.7	75.6	444.7	0.00	0.00	0.00
3,920.0	10.13	9.79	3,881.3	470.7	76.8	451.7	0.00	0.00	0.00
3,960.0	10.13	9.79	3,920.6	477.6	78.0	458.8	0.00	0.00	0.00
4,000.0	10.13	9.79	3,960.0	484.5	79.2	465.8	0.00	0.00	0.00
4,040.0	10.13	9.79	3,999.4	491.5	80.4	472.9	0.00	0.00	0.00
4,080.0	10.13	9.79	4,038.8	498.4	81.6	479.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-30D Plan #1 (12-09-10)		

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)
4,120.0	10.13	9.79	4,078.1	505.3	82.8	486.9	0.00	0.00	0.00
4,160.0	10.13	9.79	4,117.5	512.3	84.0	494.0	0.00	0.00	0.00
4,200.0	10.13	9.79	4,156.9	519.2	85.2	501.0	0.00	0.00	0.00
4,240.0	10.13	9.79	4,196.3	526.1	86.4	508.0	0.00	0.00	0.00
4,280.0	10.13	9.79	4,235.7	533.1	87.6	515.1	0.00	0.00	0.00
4,320.0	10.13	9.79	4,275.0	540.0	88.8	522.1	0.00	0.00	0.00
4,360.0	10.13	9.79	4,314.4	547.0	90.0	529.2	0.00	0.00	0.00
4,400.0	10.13	9.79	4,353.8	553.9	91.1	536.2	0.00	0.00	0.00
4,440.0	10.13	9.79	4,393.2	560.8	92.3	543.2	0.00	0.00	0.00
4,480.0	10.13	9.79	4,432.5	567.8	93.5	550.3	0.00	0.00	0.00
4,520.0	10.13	9.79	4,471.9	574.7	94.7	557.3	0.00	0.00	0.00
4,544.4	10.13	9.79	4,495.9	578.9	95.5	561.6	0.00	0.00	0.00
4,560.0	9.82	9.79	4,511.3	581.6	95.9	564.3	2.00	-2.00	0.00
4,600.0	9.02	9.79	4,550.8	588.0	97.0	570.9	2.00	-2.00	0.00
4,640.0	8.22	9.79	4,590.3	594.0	98.1	576.9	2.00	-2.00	0.00
4,680.0	7.42	9.79	4,629.9	599.3	99.0	582.3	2.00	-2.00	0.00
4,720.0	6.62	9.79	4,669.6	604.1	99.8	587.2	2.00	-2.00	0.00
4,760.0	5.82	9.79	4,709.4	608.4	100.6	591.5	2.00	-2.00	0.00
4,800.0	5.02	9.79	4,749.2	612.1	101.2	595.3	2.00	-2.00	0.00
4,840.0	4.22	9.79	4,789.1	615.3	101.7	598.5	2.00	-2.00	0.00
4,880.0	3.42	9.79	4,829.0	617.9	102.2	601.2	2.00	-2.00	0.00
4,920.0	2.62	9.79	4,868.9	620.0	102.6	603.3	2.00	-2.00	0.00
4,960.0	1.82	9.79	4,908.9	621.5	102.8	604.9	2.00	-2.00	0.00
5,000.0	1.02	9.79	4,948.9	622.5	103.0	605.9	2.00	-2.00	0.00
5,040.0	0.22	9.79	4,988.9	623.0	103.1	606.3	2.00	-2.00	0.00
5,051.1	0.00	0.00	5,000.0	623.0	103.1	606.3	2.00	-2.00	0.00
TARGET BHL 75'FNL, 75'FEL									
5,080.0	0.00	0.00	5,028.9	623.0	103.1	606.3	0.00	0.00	0.00
5,120.0	0.00	0.00	5,068.9	623.0	103.1	606.3	0.00	0.00	0.00
5,160.0	0.00	0.00	5,108.9	623.0	103.1	606.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,148.9	623.0	103.1	606.3	0.00	0.00	0.00
5,240.0	0.00	0.00	5,188.9	623.0	103.1	606.3	0.00	0.00	0.00
5,280.0	0.00	0.00	5,228.9	623.0	103.1	606.3	0.00	0.00	0.00
5,320.0	0.00	0.00	5,268.9	623.0	103.1	606.3	0.00	0.00	0.00
5,360.0	0.00	0.00	5,308.9	623.0	103.1	606.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,348.9	623.0	103.1	606.3	0.00	0.00	0.00
5,440.0	0.00	0.00	5,388.9	623.0	103.1	606.3	0.00	0.00	0.00
5,480.0	0.00	0.00	5,428.9	623.0	103.1	606.3	0.00	0.00	0.00
5,520.0	0.00	0.00	5,468.9	623.0	103.1	606.3	0.00	0.00	0.00
5,560.0	0.00	0.00	5,508.9	623.0	103.1	606.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,548.9	623.0	103.1	606.3	0.00	0.00	0.00
5,640.0	0.00	0.00	5,588.9	623.0	103.1	606.3	0.00	0.00	0.00
5,680.0	0.00	0.00	5,628.9	623.0	103.1	606.3	0.00	0.00	0.00
5,720.0	0.00	0.00	5,668.9	623.0	103.1	606.3	0.00	0.00	0.00
5,760.0	0.00	0.00	5,708.9	623.0	103.1	606.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,748.9	623.0	103.1	606.3	0.00	0.00	0.00
5,840.0	0.00	0.00	5,788.9	623.0	103.1	606.3	0.00	0.00	0.00
5,880.0	0.00	0.00	5,828.9	623.0	103.1	606.3	0.00	0.00	0.00
5,920.0	0.00	0.00	5,868.9	623.0	103.1	606.3	0.00	0.00	0.00
5,960.0	0.00	0.00	5,908.9	623.0	103.1	606.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,948.9	623.0	103.1	606.3	0.00	0.00	0.00
6,040.0	0.00	0.00	5,988.9	623.0	103.1	606.3	0.00	0.00	0.00
6,080.0	0.00	0.00	6,028.9	623.0	103.1	606.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-30D Plan #1 (12-09-10)		

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)
6,120.0	0.00	0.00	6,068.9	623.0	103.1	606.3	0.00	0.00	0.00
6,160.0	0.00	0.00	6,108.9	623.0	103.1	606.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,148.9	623.0	103.1	606.3	0.00	0.00	0.00
6,240.0	0.00	0.00	6,188.9	623.0	103.1	606.3	0.00	0.00	0.00
6,280.0	0.00	0.00	6,228.9	623.0	103.1	606.3	0.00	0.00	0.00
6,320.0	0.00	0.00	6,268.9	623.0	103.1	606.3	0.00	0.00	0.00
6,360.0	0.00	0.00	6,308.9	623.0	103.1	606.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,348.9	623.0	103.1	606.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,388.9	623.0	103.1	606.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,428.9	623.0	103.1	606.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,468.9	623.0	103.1	606.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,508.9	623.0	103.1	606.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,548.9	623.0	103.1	606.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,588.9	623.0	103.1	606.3	0.00	0.00	0.00
6,640.1	0.00	0.00	6,589.0	623.0	103.1	606.3	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 75'FNL & 75'FEL									
6,680.0	0.00	0.00	6,628.9	623.0	103.1	606.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,668.9	623.0	103.1	606.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,708.9	623.0	103.1	606.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,748.9	623.0	103.1	606.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,788.9	623.0	103.1	606.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,828.9	623.0	103.1	606.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,868.9	623.0	103.1	606.3	0.00	0.00	0.00
6,955.1	0.00	0.00	6,904.0	623.0	103.1	606.3	0.00	0.00	0.00
CODELL									
6,960.0	0.00	0.00	6,908.9	623.0	103.1	606.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,948.9	623.0	103.1	606.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,988.9	623.0	103.1	606.3	0.00	0.00	0.00
7,080.0	0.00	0.00	7,028.9	623.0	103.1	606.3	0.00	0.00	0.00
7,105.1	0.00	0.00	7,054.0	623.0	103.1	606.3	0.00	0.00	0.00
HARD LINES 75'N & 75'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									
TARGET CIRCLE 75'	0.00	0.00	6,589.0	623.0	103.1	1,386,780.97	3,250,087.09	40° 23' 29.904 N	104° 36' 7.740 W
- plan hits target center									
- Circle (radius 75.0)									
HARD LINES 75'N & 75'E	0.00	0.00	7,054.0	698.0	178.1	1,386,856.75	3,250,161.35	40° 23' 30.645 N	104° 36' 6.770 W
- plan misses target center by 106.1ft at 7105.1ft MD (7054.0 TVD, 623.0 N, 103.1 E)									
- Polygon									
Point 1			7,054.0	0.0	0.0	1,386,856.75	3,250,161.35		
Point 2			7,054.0	-200.0	0.0	1,386,656.77	3,250,163.38		
Point 3			7,054.0	0.0	0.0	1,386,856.75	3,250,161.35		
Point 4			7,054.0	0.0	-200.0	1,386,854.72	3,249,961.37		
TARGET BHL 75'FNL	0.00	0.00	5,000.0	623.0	103.1	1,386,780.97	3,250,087.09	40° 23' 29.904 N	104° 36' 7.740 W
- plan hits target center									
- Point									

Database:	Landmark	Local Co-ordinate Reference:	Site McCauley B19-31D Pad Sec.24-T5N-R65W
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4644.0ft (Original Well Elev)
Project:	SEC.24-T5N-R65W	MD Reference:	WELL @ 4644.0ft (Original Well Elev)
Site:	McCauley B19-31D Pad Sec.24-T5N-R65W	North Reference:	True
Well:	McCauley B19-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble McCauley B19-30D Plan #1 (12-09-10)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
600.0	600.0	8 5/8"	8-5/8	12-1/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,640.1	6,589.0	NIOBRARA		0.00	
6,955.1	6,904.0	CODELL		0.00	