

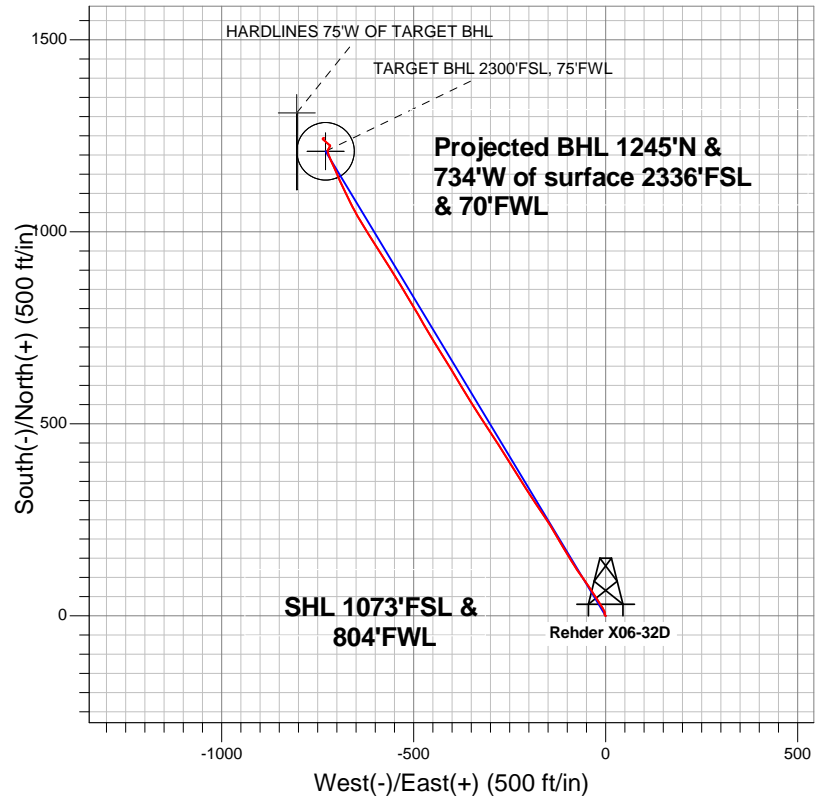


# Well Name: Rehder X06-32D

Surface Location: Rehder X06-33D Pad Sec.6-T2N-R65W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4978.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1303262.05	3219958.84	40.163170	-104.712970	
Original Well Elev			WELL @ 4991.0ft (Original Well Elev)			

## NOBLE ENERGY INC WELD COUNTY CO



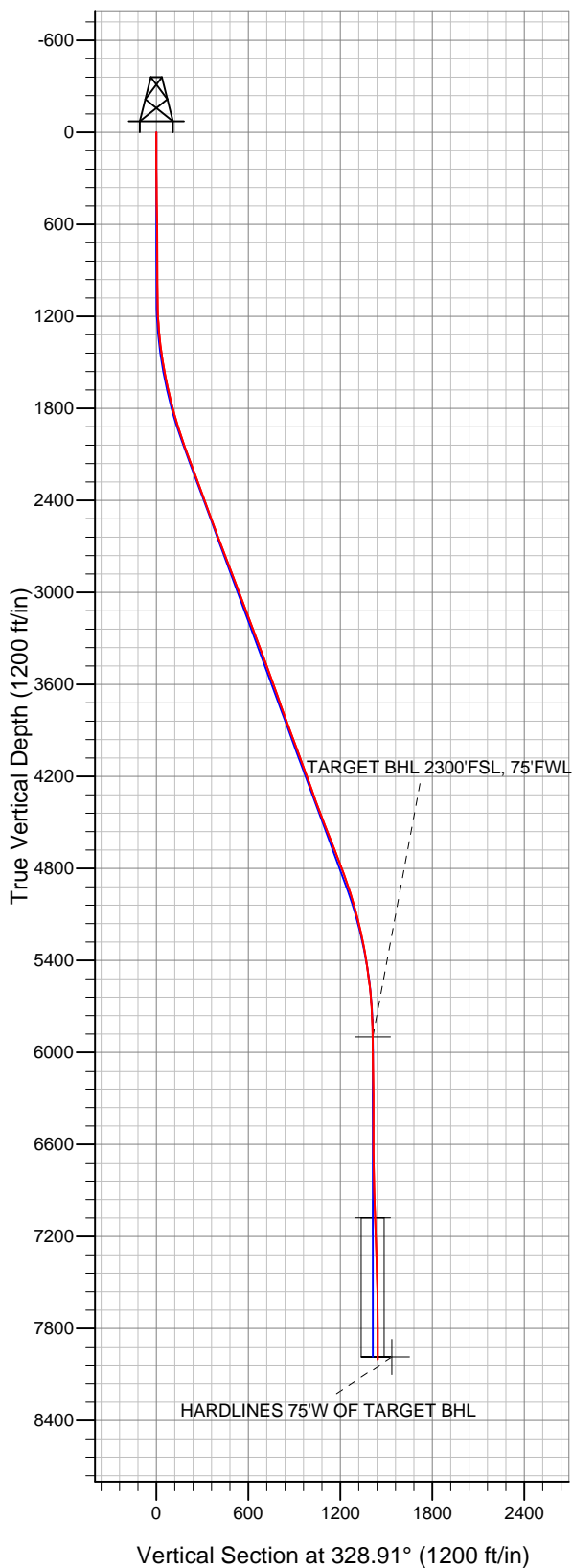
### LEGEND

- Wellbore #1
- Rehder X06-32D, Wellbore #1, Noble Rehder X06-32D Plan #2 (6-21-12) R V0
- Survey #1

## Final Survey Plot

Projected Final Survey -  
8235'MD & 8004'TVD @ 1445'VS  
1.00 deg Inc 59.30 deg AZ

Project: Sec.6-T2N-R65W  
Site: Rehder X06-33D Pad Sec.6-T2N-R65W  
Well: Rehder X06-32D  
Plan: Wellbore #1





# **NOBLE ENERGY INC WELD COUNTY CO**

**Sec.6-T2N-R65W**

**Rehder X06-33D Pad Sec.6-T2N-R65W**

**Rehder X06-32D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**29 June, 2012**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Rehder X06-32D
<b>Project:</b>	Sec.6-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4991.0ft (Original Well Elev)
<b>Site:</b>	Rehder X06-33D Pad Sec.6-T2N-R65W	<b>MD Reference:</b>	WELL @ 4991.0ft (Original Well Elev)
<b>Well:</b>	Rehder X06-32D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	Sec.6-T2N-R65W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Rehder X06-33D Pad Sec.6-T2N-R65W		
<b>Site Position:</b>		<b>Northing:</b>	1,303,261.68ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,219,914.13ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.163170
		<b>Longitude:</b>	-104.713130
		<b>Grid Convergence:</b>	0.51 °

<b>Well</b>	Rehder X06-32D		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,303,262.05 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,219,958.84 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.163170
		<b>Longitude:</b>	-104.712970
		<b>Ground Level:</b>	4,978.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/21/2012	8.68	66.83	52,904

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	5,900.0	0.0	0.0	328.91	

<b>Survey Program</b>	<b>Date</b>	6/29/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
148.0	8,235.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
148.0	0.40	223.80	148.0	-0.4	-0.4	-0.1	0.27	0.27	0.00	
238.0	0.50	336.70	238.0	-0.2	-0.7	0.2	0.84	0.11	125.44	
326.0	0.70	326.10	326.0	0.6	-1.2	1.1	0.26	0.23	-12.05	
454.0	1.10	326.00	454.0	2.2	-2.3	3.1	0.31	0.31	-0.08	
581.0	0.60	8.70	581.0	3.9	-2.9	4.8	0.61	-0.39	33.62	
709.0	0.50	356.90	709.0	5.1	-2.8	5.8	0.12	-0.08	-9.22	
836.0	0.40	7.60	836.0	6.1	-2.8	6.7	0.10	-0.08	8.43	
964.0	0.40	2.70	964.0	7.0	-2.7	7.4	0.03	0.00	-3.83	
1,000.0	0.40	1.90	999.9	7.2	-2.7	7.6	0.02	0.00	-2.22	
1,050.0	0.40	1.90	1,049.9	7.6	-2.7	7.9	0.00	0.00	0.00	
1,116.0	1.20	2.50	1,115.9	8.5	-2.6	8.7	1.21	1.21	0.91	
1,245.0	3.80	332.50	1,244.8	13.7	-4.6	14.1	2.19	2.02	-23.26	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Rehder X06-32D
<b>Project:</b>	Sec.6-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4991.0ft (Original Well Elev)
<b>Site:</b>	Rehder X06-33D Pad Sec.6-T2N-R65W	<b>MD Reference:</b>	WELL @ 4991.0ft (Original Well Elev)
<b>Well:</b>	Rehder X06-32D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

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)
1,373.0	6.50	330.40	1,372.3	23.7	-10.1	25.5	2.11	2.11	-1.64
1,501.0	9.40	325.40	1,499.0	38.6	-19.6	43.2	2.33	2.27	-3.91
1,629.0	11.80	329.30	1,624.8	58.5	-32.2	66.7	1.96	1.88	3.05
1,758.0	13.80	323.70	1,750.6	82.2	-48.1	95.3	1.82	1.55	-4.34
1,886.0	16.40	325.40	1,874.2	109.4	-67.4	128.5	2.06	2.03	1.33
2,014.0	19.20	328.10	1,996.1	142.2	-88.8	167.6	2.28	2.19	2.11
2,142.0	20.20	329.00	2,116.6	179.0	-111.3	210.7	0.82	0.78	0.70
2,271.0	20.30	330.40	2,237.6	217.5	-133.8	255.4	0.38	0.08	1.09
2,399.0	20.00	326.10	2,357.8	255.0	-157.0	299.4	1.18	-0.23	-3.36
2,527.0	20.60	325.80	2,477.8	291.8	-181.8	343.8	0.48	0.47	-0.23
2,655.0	20.20	327.50	2,597.8	329.1	-206.4	388.4	0.56	-0.31	1.33
2,784.0	20.30	328.10	2,718.8	366.8	-230.2	433.0	0.18	0.08	0.47
2,912.0	21.00	328.30	2,838.6	405.2	-254.0	478.1	0.55	0.55	0.16
3,040.0	21.00	327.50	2,958.1	444.1	-278.3	524.0	0.22	0.00	-0.63
3,168.0	20.90	326.10	3,077.6	482.4	-303.4	569.7	0.40	-0.08	-1.09
3,297.0	20.70	328.10	3,198.2	520.8	-328.3	615.5	0.57	-0.16	1.55
3,425.0	20.10	328.30	3,318.2	558.7	-351.8	660.1	0.47	-0.47	0.16
3,553.0	20.10	328.40	3,438.4	596.2	-374.9	704.1	0.03	0.00	0.08
3,681.0	20.40	328.60	3,558.5	634.0	-398.0	748.4	0.24	0.23	0.16
3,810.0	19.30	328.40	3,679.8	671.3	-420.9	792.2	0.85	-0.85	-0.16
3,938.0	20.50	327.50	3,800.2	708.2	-444.0	835.8	0.97	0.94	-0.70
4,066.0	20.10	331.20	3,920.2	746.4	-466.7	880.2	1.05	-0.31	2.89
4,194.0	19.80	329.10	4,040.6	784.3	-488.4	923.8	0.61	-0.23	-1.64
4,323.0	20.60	329.10	4,161.6	822.5	-511.3	968.4	0.62	0.62	0.00
4,451.0	19.90	328.60	4,281.7	860.4	-534.2	1,012.7	0.56	-0.55	-0.39
4,579.0	19.70	328.40	4,402.1	897.4	-556.8	1,056.0	0.16	-0.16	-0.16
4,707.0	21.30	327.40	4,522.0	935.3	-580.7	1,100.8	1.28	1.25	-0.78
4,836.0	21.70	328.30	4,642.1	975.4	-605.8	1,148.1	0.40	0.31	0.70
4,964.0	21.30	327.50	4,761.2	1,015.1	-630.7	1,195.0	0.39	-0.31	-0.63
5,092.0	19.20	331.90	4,881.2	1,053.3	-653.2	1,239.3	2.03	-1.64	3.44
5,220.0	16.60	333.70	5,003.0	1,088.3	-671.2	1,278.5	2.08	-2.03	1.41
5,349.0	14.50	335.10	5,127.3	1,119.4	-686.1	1,312.9	1.65	-1.63	1.09
5,477.0	12.30	337.00	5,251.8	1,146.5	-698.2	1,342.4	1.75	-1.72	1.48
5,605.0	9.20	336.00	5,377.6	1,168.4	-707.7	1,366.0	2.43	-2.42	-0.78
5,733.0	7.40	335.50	5,504.2	1,185.3	-715.3	1,384.4	1.41	-1.41	-0.39
5,862.0	5.50	339.70	5,632.4	1,198.6	-720.9	1,398.7	1.52	-1.47	3.26
5,990.0	2.60	350.20	5,760.1	1,207.2	-723.5	1,407.4	2.33	-2.27	8.20
6,118.0	1.10	11.10	5,888.0	1,211.3	-723.8	1,411.1	1.27	-1.17	16.33
6,129.9	1.14	12.31	5,899.9	1,211.5	-723.7	1,411.2	0.36	0.30	10.17
<b>TARGET BHL 2300'FSL, 75'FWL</b>									
6,246.0	1.50	21.00	6,016.0	1,214.1	-722.9	1,413.0	0.36	0.31	7.48
6,375.0	1.10	35.20	6,144.9	1,216.7	-721.6	1,414.5	0.40	-0.31	11.01
6,503.0	0.80	13.60	6,272.9	1,218.5	-720.7	1,415.7	0.36	-0.23	-16.88
6,631.0	0.40	27.70	6,400.9	1,219.8	-720.3	1,416.5	0.33	-0.31	11.02
6,759.0	0.60	55.60	6,528.9	1,220.6	-719.5	1,416.8	0.24	0.16	21.80
6,888.0	1.10	42.30	6,657.9	1,221.9	-718.1	1,417.2	0.41	0.39	-10.31
7,016.0	1.40	343.70	6,785.9	1,224.3	-717.7	1,419.1	0.98	0.23	-45.78
7,144.0	1.40	289.60	6,913.8	1,226.3	-719.6	1,421.8	0.99	0.00	-42.27
7,272.0	2.60	316.30	7,041.7	1,228.9	-723.1	1,425.8	1.16	0.94	20.86
7,308.9	2.43	315.71	7,078.6	1,230.1	-724.2	1,427.4	0.47	-0.47	-1.60
<b>TARGET CIRCLE 2300'FSL &amp; 75'FWL</b>									
7,401.0	2.00	313.80	7,170.6	1,232.6	-726.8	1,430.8	0.47	-0.46	-2.07
7,529.0	1.80	312.10	7,298.6	1,235.5	-729.9	1,434.9	0.16	-0.16	-1.33
7,658.0	1.90	305.00	7,427.5	1,238.1	-733.1	1,438.8	0.19	0.08	-5.50

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Rehder X06-32D
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<b>Site:</b>	Rehder X06-33D Pad Sec.6-T2N-R65W	<b>MD Reference:</b>	WELL @ 4991.0ft (Original Well Elev)
<b>Well:</b>	Rehder X06-32D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

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)	
7,785.0	1.30	312.40	7,554.5	1,240.3	-735.9	1,442.1	0.50	-0.47	5.83	
7,914.0	0.50	343.90	7,683.4	1,241.8	-737.1	1,444.1	0.71	-0.62	24.42	
8,042.0	0.80	57.00	7,811.4	1,242.8	-736.6	1,444.6	0.63	0.23	57.11	
8,170.0	0.90	54.90	7,939.4	1,243.9	-735.0	1,444.7	0.08	0.08	-1.64	
8,217.2	0.97	58.19	7,986.6	1,244.3	-734.3	1,444.8	0.19	0.15	6.96	
HARDLINES 75'W OF TARGET BHL										
8,235.0	1.00	59.30	8,004.4	1,244.5	-734.1	1,444.8	0.19	0.16	6.26	

Checked By: _____	Approved By: _____	Date: _____
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