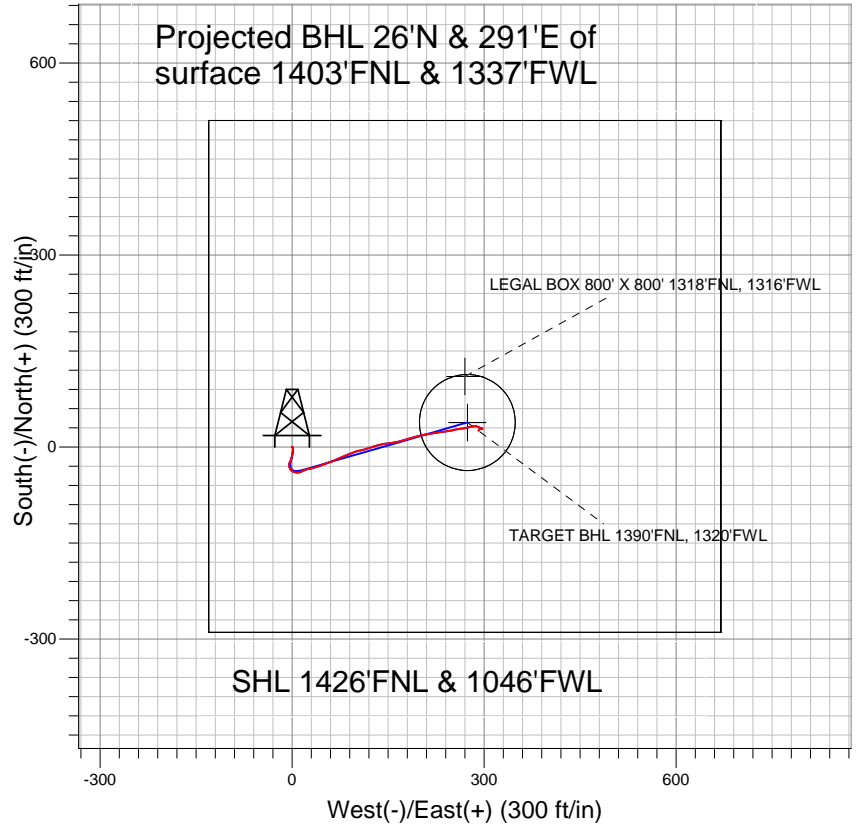


NOBLE ENERGY INC WELD COUNTY CO



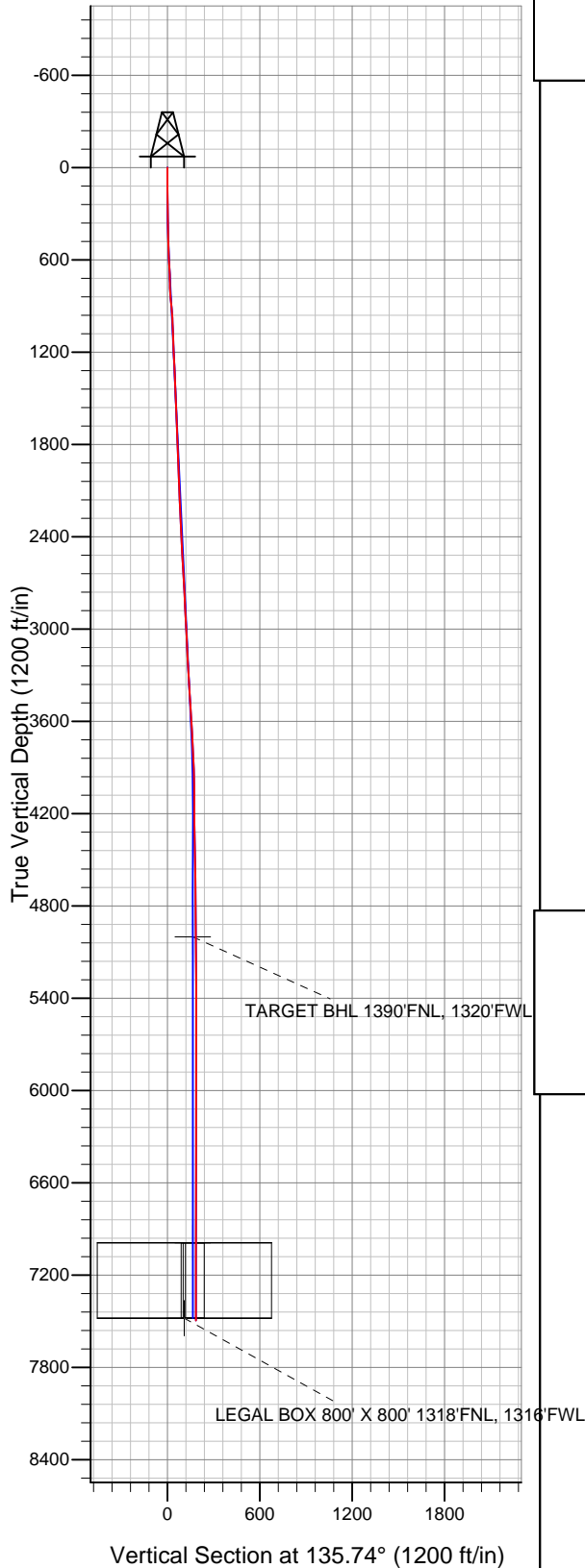
LEGEND

- IGO Farms J28-19D, Wellbore #1, Noble IGO Farms J28-19D Plan #3 (12-23-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7510'MD & 7494'TVD @ 292' VS
 0.9 deg Inc 200.0 deg AZ

Project: SEC.28-T5N-R66W
 Site: IGO Farms Pad Sec.28-T5N-R66W
 Well: IGO Farms J28-19D
 Plan: Wellbore #1





Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.28-T5N-R66W

IGO Farms Pad Sec.28-T5N-R66W

IGO Farms J28-19D

Wellbore #1

Survey: Survey #1

Standard Survey Report

06 January, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well IGO Farms J28-19D
Project:	SEC.28-T5N-R66W	TVD Reference:	WELL @ 4889.0ft (Original Well Elev)
Site:	IGO Farms Pad Sec.28-T5N-R66W	MD Reference:	WELL @ 4889.0ft (Original Well Elev)
Well:	IGO Farms J28-19D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.28-T5N-R66W, 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	IGO Farms Pad Sec.28-T5N-R66W		
Site Position:		Northing:	1,379,821.42 ft
From:	Lat/Long	Easting:	3,197,699.53 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 22' 25.824 N
		Longitude:	104° 47' 25.512 W
		Grid Convergence:	0.46 °

Well	IGO Farms J28-19D		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 22' 25.824 N
		Longitude:	104° 47' 24.864 W
		Ground Level:	4,876.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/22/2009	9.04	67.08	53,290

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	135.74	

Survey Program	Date	1/6/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
139.0	7,510.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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	
139.0	0.22	47.70	139.0	0.2	0.2	0.0	0.16	0.16	0.00	
361.0	0.97	157.40	361.0	-1.3	1.2	1.8	0.48	0.34	49.41	
577.0	4.70	190.00	576.7	-11.7	0.4	8.6	1.81	1.73	15.09	
633.0	5.10	192.50	632.5	-16.4	-0.5	11.3	0.81	0.71	4.46	
727.0	3.80	213.10	726.2	-23.1	-3.1	14.3	2.17	-1.38	21.91	
820.0	5.10	173.90	818.9	-29.7	-4.4	18.2	3.47	1.40	-42.15	
914.0	5.00	131.10	912.6	-36.6	-0.9	25.6	3.92	-0.11	-45.53	
1,008.0	4.80	97.70	1,006.3	-39.8	6.1	32.8	3.00	-0.21	-35.53	
1,101.0	4.20	66.50	1,099.0	-39.0	13.1	37.1	2.67	-0.65	-33.55	
1,195.0	5.20	68.40	1,192.7	-36.0	20.2	39.9	1.08	1.06	2.02	
1,288.0	5.20	79.80	1,285.3	-33.7	28.3	43.9	1.11	0.00	12.26	
1,382.0	5.90	74.50	1,378.9	-31.7	37.1	48.6	0.92	0.74	-5.64	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well IGO Farms J28-19D
Project:	SEC.28-T5N-R66W	TVD Reference:	WELL @ 4889.0ft (Original Well Elev)
Site:	IGO Farms Pad Sec.28-T5N-R66W	MD Reference:	WELL @ 4889.0ft (Original Well Elev)
Well:	IGO Farms J28-19D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
1,476.0	6.10	67.10	1,472.4	-28.5	46.4	52.8	0.85	0.21	-7.87
1,569.0	5.50	70.00	1,564.9	-25.0	55.1	56.4	0.72	-0.65	3.12
1,663.0	5.10	70.40	1,658.5	-22.1	63.3	60.0	0.43	-0.43	0.43
1,756.0	5.70	65.00	1,751.1	-18.7	71.4	63.2	0.84	0.65	-5.81
1,850.0	5.50	67.10	1,844.6	-15.0	79.8	66.4	0.30	-0.21	2.23
1,944.0	5.80	67.40	1,938.2	-11.4	88.3	69.8	0.32	0.32	0.32
2,037.0	5.90	69.70	2,030.7	-8.0	97.1	73.5	0.27	0.11	2.47
2,131.0	5.30	79.20	2,124.2	-5.5	105.9	77.8	1.17	-0.64	10.11
2,224.0	5.50	73.50	2,216.8	-3.4	114.4	82.3	0.62	0.22	-6.13
2,318.0	5.20	69.10	2,310.4	-0.6	122.7	86.1	0.54	-0.32	-4.68
2,412.0	5.60	75.20	2,404.0	2.1	131.1	90.0	0.74	0.43	6.49
2,505.0	5.50	79.40	2,496.6	4.1	139.9	94.7	0.45	-0.11	4.52
2,599.0	5.60	82.30	2,590.1	5.5	148.9	100.0	0.32	0.11	3.09
2,692.0	5.40	81.30	2,682.7	6.8	157.7	105.2	0.24	-0.22	-1.08
2,786.0	6.10	76.70	2,776.2	8.6	166.9	110.3	0.89	0.74	-4.89
2,880.0	6.20	73.80	2,869.7	11.2	176.7	115.3	0.35	0.11	-3.09
2,973.0	5.50	71.20	2,962.2	14.0	185.7	119.6	0.80	-0.75	-2.80
3,067.0	5.90	78.40	3,055.7	16.4	194.7	124.1	0.87	0.43	7.66
3,160.0	5.50	76.20	3,148.3	18.4	203.7	129.0	0.49	-0.43	-2.37
3,254.0	5.10	81.80	3,241.9	20.1	212.2	133.7	0.70	-0.43	5.96
3,348.0	5.10	80.90	3,335.5	21.4	220.5	138.6	0.09	0.00	-0.96
3,441.0	6.20	80.50	3,428.0	22.9	229.5	143.8	1.18	1.18	-0.43
3,535.0	6.30	82.80	3,521.5	24.3	239.6	149.8	0.29	0.11	2.45
3,628.0	6.70	78.00	3,613.9	26.1	250.0	155.8	0.73	0.43	-5.16
3,722.0	5.50	79.80	3,707.4	28.0	259.8	161.2	1.29	-1.28	1.91
3,816.0	5.10	83.10	3,801.0	29.3	268.4	166.3	0.53	-0.43	3.51
3,909.0	3.90	74.60	3,893.7	30.7	275.5	170.3	1.47	-1.29	-9.14
4,003.0	2.10	77.80	3,987.5	31.9	280.3	172.8	1.92	-1.91	3.40
4,096.0	0.60	87.00	4,080.5	32.3	282.5	174.0	1.62	-1.61	9.89
4,284.0	0.70	80.90	4,268.5	32.5	284.6	175.3	0.06	0.05	-3.24
4,471.0	1.10	95.10	4,455.5	32.5	287.5	177.3	0.24	0.21	7.59
4,658.0	1.00	122.50	4,642.4	31.5	290.7	180.3	0.27	-0.05	14.65
4,845.0	1.00	104.20	4,829.4	30.2	293.6	183.3	0.17	0.00	-9.79
5,015.3	0.63	116.33	4,999.7	29.4	295.9	185.4	0.24	-0.22	7.12
TARGET BHL 1390'FNL, 1320'FWL									
5,032.0	0.60	118.30	5,016.4	29.4	296.1	185.6	0.24	-0.20	11.79
5,220.0	0.30	145.50	5,204.4	28.5	297.2	187.0	0.19	-0.16	14.47
5,407.0	0.10	261.20	5,391.4	28.1	297.3	187.4	0.19	-0.11	61.87
5,594.0	0.40	258.20	5,578.4	27.9	296.5	187.0	0.16	0.16	-1.60
5,781.0	0.40	44.60	5,765.4	28.2	296.3	186.6	0.41	0.00	78.29
5,968.0	0.10	80.60	5,952.4	28.7	297.0	186.7	0.17	-0.16	19.25
6,156.0	0.10	27.60	6,140.4	28.9	297.2	186.7	0.05	0.00	-28.19
6,343.0	0.30	269.60	6,327.4	29.0	296.8	186.3	0.19	0.11	-63.10
6,530.0	0.20	8.80	6,514.4	29.4	296.3	185.8	0.21	-0.05	53.05
6,717.0	0.20	236.80	6,701.4	29.5	296.1	185.5	0.20	0.00	-70.59
6,904.0	0.60	254.70	6,888.4	29.1	294.9	185.0	0.22	0.21	9.57
7,004.7	0.38	251.18	6,989.1	28.8	294.1	184.6	0.22	-0.21	-3.49
TARGET CIRCLE 1390'FNL & 1320'FWL									
7,092.0	0.20	242.00	7,076.4	28.6	293.7	184.4	0.22	-0.21	-10.52
7,279.0	0.50	226.80	7,263.4	27.9	292.8	184.3	0.17	0.16	-8.13
7,466.0	0.80	205.40	7,450.4	26.2	291.6	184.8	0.20	0.16	-11.44
7,493.6	0.86	201.86	7,478.0	25.8	291.5	184.9	0.29	0.22	-12.80
LEGAL BOX 800' X 800' 1318'FNL, 1316'FWL									
7,510.0	0.90	200.00	7,494.4	25.6	291.4	185.0	0.29	0.23	-11.38

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Checked By: _____ Approved By: _____ Date: _____