

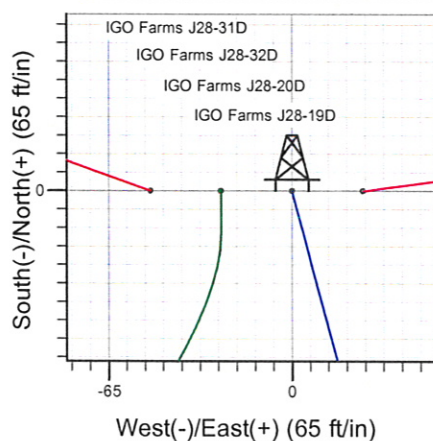
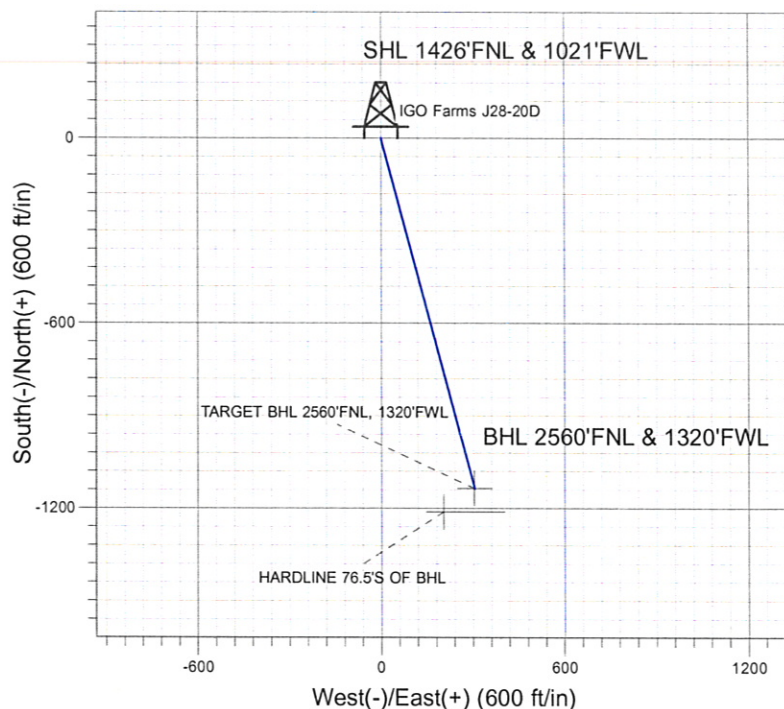
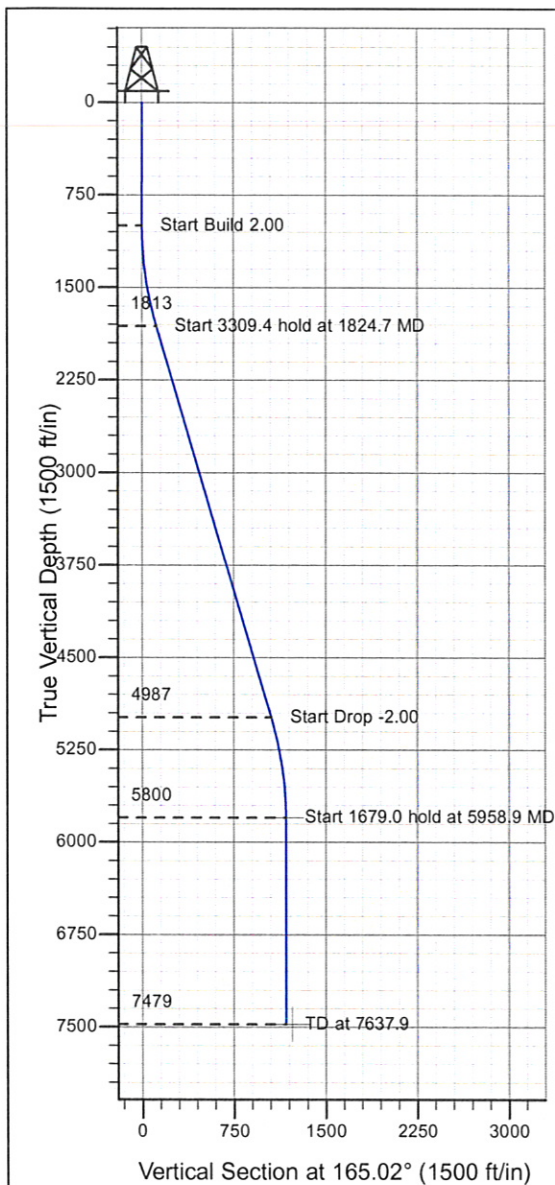
ENSIGN

Directional

Well Name: IGO Farms J28-20D

Surface Location: IGO Farms Pad Sec.28-T5N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4876.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.01379821.61 3197724.60 40° 22' 25.824 N 104° 47' 25.188 W
Original Well Elev WELL @ 4889.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



IGO Farms Pad Sec.28-T5N-R66W
IGO Farms J28-20D
Plan #1 (07-06-09)
14:09, July 07 2009



Azimuths to True North
Magnetic North: 9.10°

Magnetic Field
Strength: 53337.6snT
Dip Angle: 67.10°
Date: 7/6/2009
Model: IGRF200510

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2560'FNL, 1320'FWL	5800.0	-1135.5	303.8	40° 22' 14.603 N	104° 47' 21.263 W	Point
HARDLINE 76.5'S OF BHL	7479.0	-1212.0	203.8	40° 22' 13.847 N	104° 47' 22.555 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1824.7	16.49	165.02	1813.4	-113.9	30.5	2.00	165.02	117.9	
4	5134.2	16.49	165.02	4986.6	-1021.6	273.4	0.00	0.00	1057.5	
5	5958.9	0.00	0.00	5800.0	-1135.5	303.8	2.00	180.00	1175.4	TARGET BHL 2560'FNL, 1320'FWL
6	7637.9	0.00	0.00	7479.0	-1135.5	303.8	0.00	0.00	1175.4	



ENSIGN

Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.28-T5N-R66W

IGO Farms Pad Sec.28-T5N-R66W

IGO Farms J28-20D

Wellbore #1

Plan: Plan #1 (07-06-09)

Standard Planning Report

07 July, 2009



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well IGO Farms J28-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4889.0ft (Original Well Elev)
Project:	SEC.28-T5N-R66W	MD Reference:	WELL @ 4889.0ft (Original Well Elev)
Site:	IGO Farms Pad Sec.28-T5N-R66W	North Reference:	True
Well:	IGO Farms J28-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (07-06-09)		

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	Latitude:	40° 22' 25.824 N
From:	Lat/Long	Easting:	3,197,699.53 ft	Longitude:	104° 47' 25.512 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.46 °

Well	IGO Farms J28-20D					
Well Position	+N/-S	0.0 ft	Northing:	1,379,821.61 ft	Latitude:	40° 22' 25.824 N
	+E/-W	25.1 ft	Easting:	3,197,724.60 ft	Longitude:	104° 47' 25.188 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,876.0 ft

Wellbore	Wellbore #1				
-----------------	-------------	--	--	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	7/6/2009	9.10	67.10	53,338

Design	Plan #1 (07-06-09)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	165.02

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,824.7	16.49	165.02	1,813.4	-113.9	30.5	2.00	2.00	0.00	165.02	
5,134.2	16.49	165.02	4,986.6	-1,021.6	273.4	0.00	0.00	0.00	0.00	
5,958.9	0.00	0.00	5,800.0	-1,135.5	303.8	2.00	-2.00	0.00	180.00	TARGET BHL 256C
7,637.9	0.00	0.00	7,479.0	-1,135.5	303.8	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well IGO Farms J28-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4889.0ft (Original Well Elev)
Project:	SEC.28-T5N-R66W	MD Reference:	WELL @ 4889.0ft (Original Well Elev)
Site:	IGO Farms Pad Sec.28-T5N-R66W	North Reference:	True
Well:	IGO Farms J28-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (07-06-09)		

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
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
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.80	165.02	1,040.0	-0.3	0.1	0.3	2.00	2.00	0.00
1,080.0	1.60	165.02	1,080.0	-1.1	0.3	1.1	2.00	2.00	0.00
1,120.0	2.40	165.02	1,120.0	-2.4	0.6	2.5	2.00	2.00	0.00
1,160.0	3.20	165.02	1,159.9	-4.3	1.2	4.5	2.00	2.00	0.00
1,200.0	4.00	165.02	1,199.8	-6.7	1.8	7.0	2.00	2.00	0.00
1,240.0	4.80	165.02	1,239.7	-9.7	2.6	10.0	2.00	2.00	0.00
1,280.0	5.60	165.02	1,279.6	-13.2	3.5	13.7	2.00	2.00	0.00
1,320.0	6.40	165.02	1,319.3	-17.2	4.6	17.9	2.00	2.00	0.00
1,360.0	7.20	165.02	1,359.1	-21.8	5.8	22.6	2.00	2.00	0.00
1,400.0	8.00	165.02	1,398.7	-26.9	7.2	27.9	2.00	2.00	0.00
1,440.0	8.80	165.02	1,438.3	-32.6	8.7	33.7	2.00	2.00	0.00
1,480.0	9.60	165.02	1,477.8	-38.8	10.4	40.1	2.00	2.00	0.00
1,520.0	10.40	165.02	1,517.1	-45.5	12.2	47.1	2.00	2.00	0.00
1,560.0	11.20	165.02	1,556.4	-52.7	14.1	54.6	2.00	2.00	0.00
1,600.0	12.00	165.02	1,595.6	-60.5	16.2	62.6	2.00	2.00	0.00
1,640.0	12.80	165.02	1,634.7	-68.8	18.4	71.2	2.00	2.00	0.00
1,680.0	13.60	165.02	1,673.6	-77.6	20.8	80.3	2.00	2.00	0.00
1,720.0	14.40	165.02	1,712.4	-86.9	23.3	90.0	2.00	2.00	0.00
1,760.0	15.20	165.02	1,751.1	-96.8	25.9	100.2	2.00	2.00	0.00
1,800.0	16.00	165.02	1,789.6	-107.2	28.7	111.0	2.00	2.00	0.00
1,824.7	16.49	165.02	1,813.4	-113.9	30.5	117.9	2.00	2.00	0.00
1,840.0	16.49	165.02	1,828.0	-118.1	31.6	122.2	0.00	0.00	0.00
1,880.0	16.49	165.02	1,866.4	-129.0	34.5	133.6	0.00	0.00	0.00
1,920.0	16.49	165.02	1,904.7	-140.0	37.5	144.9	0.00	0.00	0.00
1,960.0	16.49	165.02	1,943.1	-151.0	40.4	156.3	0.00	0.00	0.00
2,000.0	16.49	165.02	1,981.4	-162.0	43.3	167.7	0.00	0.00	0.00
2,040.0	16.49	165.02	2,019.8	-172.9	46.3	179.0	0.00	0.00	0.00
2,080.0	16.49	165.02	2,058.1	-183.9	49.2	190.4	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well IGO Farms J28-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4889.0ft (Original Well Elev)
Project:	SEC.28-T5N-R66W	MD Reference:	WELL @ 4889.0ft (Original Well Elev)
Site:	IGO Farms Pad Sec.28-T5N-R66W	North Reference:	True
Well:	IGO Farms J28-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (07-06-09)		

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)
2,120.0	16.49	165.02	2,096.5	-194.9	52.1	201.7	0.00	0.00	0.00
2,160.0	16.49	165.02	2,134.9	-205.8	55.1	213.1	0.00	0.00	0.00
2,200.0	16.49	165.02	2,173.2	-216.8	58.0	224.4	0.00	0.00	0.00
2,240.0	16.49	165.02	2,211.6	-227.8	61.0	235.8	0.00	0.00	0.00
2,280.0	16.49	165.02	2,249.9	-238.8	63.9	247.2	0.00	0.00	0.00
2,320.0	16.49	165.02	2,288.3	-249.7	66.8	258.5	0.00	0.00	0.00
2,360.0	16.49	165.02	2,326.6	-260.7	69.8	269.9	0.00	0.00	0.00
2,400.0	16.49	165.02	2,365.0	-271.7	72.7	281.2	0.00	0.00	0.00
2,440.0	16.49	165.02	2,403.3	-282.6	75.6	292.6	0.00	0.00	0.00
2,480.0	16.49	165.02	2,441.7	-293.6	78.6	303.9	0.00	0.00	0.00
2,520.0	16.49	165.02	2,480.0	-304.6	81.5	315.3	0.00	0.00	0.00
2,560.0	16.49	165.02	2,518.4	-315.6	84.4	326.7	0.00	0.00	0.00
2,600.0	16.49	165.02	2,556.8	-326.5	87.4	338.0	0.00	0.00	0.00
2,640.0	16.49	165.02	2,595.1	-337.5	90.3	349.4	0.00	0.00	0.00
2,680.0	16.49	165.02	2,633.5	-348.5	93.2	360.7	0.00	0.00	0.00
2,720.0	16.49	165.02	2,671.8	-359.4	96.2	372.1	0.00	0.00	0.00
2,760.0	16.49	165.02	2,710.2	-370.4	99.1	383.4	0.00	0.00	0.00
2,800.0	16.49	165.02	2,748.5	-381.4	102.0	394.8	0.00	0.00	0.00
2,840.0	16.49	165.02	2,786.9	-392.4	105.0	406.2	0.00	0.00	0.00
2,880.0	16.49	165.02	2,825.2	-403.3	107.9	417.5	0.00	0.00	0.00
2,920.0	16.49	165.02	2,863.6	-414.3	110.9	428.9	0.00	0.00	0.00
2,960.0	16.49	165.02	2,901.9	-425.3	113.8	440.2	0.00	0.00	0.00
3,000.0	16.49	165.02	2,940.3	-436.2	116.7	451.6	0.00	0.00	0.00
3,040.0	16.49	165.02	2,978.6	-447.2	119.7	462.9	0.00	0.00	0.00
3,080.0	16.49	165.02	3,017.0	-458.2	122.6	474.3	0.00	0.00	0.00
3,120.0	16.49	165.02	3,055.4	-469.2	125.5	485.7	0.00	0.00	0.00
3,160.0	16.49	165.02	3,093.7	-480.1	128.5	497.0	0.00	0.00	0.00
3,200.0	16.49	165.02	3,132.1	-491.1	131.4	508.4	0.00	0.00	0.00
3,240.0	16.49	165.02	3,170.4	-502.1	134.3	519.7	0.00	0.00	0.00
3,280.0	16.49	165.02	3,208.8	-513.0	137.3	531.1	0.00	0.00	0.00
3,320.0	16.49	165.02	3,247.1	-524.0	140.2	542.4	0.00	0.00	0.00
3,360.0	16.49	165.02	3,285.5	-535.0	143.1	553.8	0.00	0.00	0.00
3,400.0	16.49	165.02	3,323.8	-545.9	146.1	565.2	0.00	0.00	0.00
3,440.0	16.49	165.02	3,362.2	-556.9	149.0	576.5	0.00	0.00	0.00
3,480.0	16.49	165.02	3,400.5	-567.9	152.0	587.9	0.00	0.00	0.00
3,520.0	16.49	165.02	3,438.9	-578.9	154.9	599.2	0.00	0.00	0.00
3,560.0	16.49	165.02	3,477.2	-589.8	157.8	610.6	0.00	0.00	0.00
3,600.0	16.49	165.02	3,515.6	-600.8	160.8	621.9	0.00	0.00	0.00
3,640.0	16.49	165.02	3,554.0	-611.8	163.7	633.3	0.00	0.00	0.00
3,680.0	16.49	165.02	3,592.3	-622.7	166.6	644.7	0.00	0.00	0.00
3,720.0	16.49	165.02	3,630.7	-633.7	169.6	656.0	0.00	0.00	0.00
3,760.0	16.49	165.02	3,669.0	-644.7	172.5	667.4	0.00	0.00	0.00
3,800.0	16.49	165.02	3,707.4	-655.7	175.4	678.7	0.00	0.00	0.00
3,840.0	16.49	165.02	3,745.7	-666.6	178.4	690.1	0.00	0.00	0.00
3,880.0	16.49	165.02	3,784.1	-677.6	181.3	701.4	0.00	0.00	0.00
3,920.0	16.49	165.02	3,822.4	-688.6	184.2	712.8	0.00	0.00	0.00
3,960.0	16.49	165.02	3,860.8	-699.5	187.2	724.2	0.00	0.00	0.00
4,000.0	16.49	165.02	3,899.1	-710.5	190.1	735.5	0.00	0.00	0.00
4,040.0	16.49	165.02	3,937.5	-721.5	193.1	746.9	0.00	0.00	0.00
4,080.0	16.49	165.02	3,975.8	-732.5	196.0	758.2	0.00	0.00	0.00
4,120.0	16.49	165.02	4,014.2	-743.4	198.9	769.6	0.00	0.00	0.00
4,160.0	16.49	165.02	4,052.6	-754.4	201.9	780.9	0.00	0.00	0.00
4,200.0	16.49	165.02	4,090.9	-765.4	204.8	792.3	0.00	0.00	0.00
4,240.0	16.49	165.02	4,129.3	-776.3	207.7	803.7	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well IGO Farms J28-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4889.0ft (Original Well Elev)
Project:	SEC.28-T5N-R66W	MD Reference:	WELL @ 4889.0ft (Original Well Elev)
Site:	IGO Farms Pad Sec.28-T5N-R66W	North Reference:	True
Well:	IGO Farms J28-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (07-06-09)		

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)
4,280.0	16.49	165.02	4,167.6	-787.3	210.7	815.0	0.00	0.00	0.00
4,320.0	16.49	165.02	4,206.0	-798.3	213.6	826.4	0.00	0.00	0.00
4,360.0	16.49	165.02	4,244.3	-809.3	216.5	837.7	0.00	0.00	0.00
4,400.0	16.49	165.02	4,282.7	-820.2	219.5	849.1	0.00	0.00	0.00
4,440.0	16.49	165.02	4,321.0	-831.2	222.4	860.4	0.00	0.00	0.00
4,480.0	16.49	165.02	4,359.4	-842.2	225.3	871.8	0.00	0.00	0.00
4,520.0	16.49	165.02	4,397.7	-853.1	228.3	883.2	0.00	0.00	0.00
4,560.0	16.49	165.02	4,436.1	-864.1	231.2	894.5	0.00	0.00	0.00
4,600.0	16.49	165.02	4,474.4	-875.1	234.1	905.9	0.00	0.00	0.00
4,640.0	16.49	165.02	4,512.8	-886.1	237.1	917.2	0.00	0.00	0.00
4,680.0	16.49	165.02	4,551.2	-897.0	240.0	928.6	0.00	0.00	0.00
4,720.0	16.49	165.02	4,589.5	-908.0	243.0	939.9	0.00	0.00	0.00
4,760.0	16.49	165.02	4,627.9	-919.0	245.9	951.3	0.00	0.00	0.00
4,800.0	16.49	165.02	4,666.2	-929.9	248.8	962.6	0.00	0.00	0.00
4,840.0	16.49	165.02	4,704.6	-940.9	251.8	974.0	0.00	0.00	0.00
4,880.0	16.49	165.02	4,742.9	-951.9	254.7	985.4	0.00	0.00	0.00
4,920.0	16.49	165.02	4,781.3	-962.8	257.6	996.7	0.00	0.00	0.00
4,960.0	16.49	165.02	4,819.6	-973.8	260.6	1,008.1	0.00	0.00	0.00
5,000.0	16.49	165.02	4,858.0	-984.8	263.5	1,019.4	0.00	0.00	0.00
5,040.0	16.49	165.02	4,896.3	-995.8	266.4	1,030.8	0.00	0.00	0.00
5,080.0	16.49	165.02	4,934.7	-1,006.7	269.4	1,042.1	0.00	0.00	0.00
5,120.0	16.49	165.02	4,973.0	-1,017.7	272.3	1,053.5	0.00	0.00	0.00
5,134.2	16.49	165.02	4,986.6	-1,021.6	273.4	1,057.5	0.00	0.00	0.00
5,160.0	15.98	165.02	5,011.4	-1,028.6	275.2	1,064.8	2.00	-2.00	0.00
5,200.0	15.18	165.02	5,050.0	-1,038.9	278.0	1,075.5	2.00	-2.00	0.00
5,240.0	14.38	165.02	5,088.6	-1,048.8	280.6	1,085.7	2.00	-2.00	0.00
5,280.0	13.58	165.02	5,127.5	-1,058.1	283.1	1,095.4	2.00	-2.00	0.00
5,320.0	12.78	165.02	5,166.4	-1,066.9	285.5	1,104.5	2.00	-2.00	0.00
5,360.0	11.98	165.02	5,205.5	-1,075.2	287.7	1,113.0	2.00	-2.00	0.00
5,400.0	11.18	165.02	5,244.7	-1,083.0	289.8	1,121.1	2.00	-2.00	0.00
5,440.0	10.38	165.02	5,283.9	-1,090.2	291.7	1,128.6	2.00	-2.00	0.00
5,480.0	9.58	165.02	5,323.3	-1,096.9	293.5	1,135.5	2.00	-2.00	0.00
5,520.0	8.78	165.02	5,362.8	-1,103.1	295.2	1,141.9	2.00	-2.00	0.00
5,560.0	7.98	165.02	5,402.4	-1,108.7	296.7	1,147.7	2.00	-2.00	0.00
5,600.0	7.18	165.02	5,442.1	-1,113.8	298.0	1,153.0	2.00	-2.00	0.00
5,640.0	6.38	165.02	5,481.8	-1,118.3	299.2	1,157.7	2.00	-2.00	0.00
5,680.0	5.58	165.02	5,521.6	-1,122.4	300.3	1,161.9	2.00	-2.00	0.00
5,720.0	4.78	165.02	5,561.4	-1,125.9	301.3	1,165.5	2.00	-2.00	0.00
5,760.0	3.98	165.02	5,601.3	-1,128.8	302.0	1,168.5	2.00	-2.00	0.00
5,800.0	3.18	165.02	5,641.2	-1,131.2	302.7	1,171.0	2.00	-2.00	0.00
5,840.0	2.38	165.02	5,681.2	-1,133.1	303.2	1,173.0	2.00	-2.00	0.00
5,880.0	1.58	165.02	5,721.1	-1,134.4	303.5	1,174.3	2.00	-2.00	0.00
5,920.0	0.78	165.02	5,761.1	-1,135.2	303.8	1,175.2	2.00	-2.00	0.00
5,958.9	0.00	0.00	5,800.0	-1,135.5	303.8	1,175.4	2.00	-2.00	0.00
TARGET BHL 2560'FNL, 1320'FWL									
5,960.0	0.00	0.00	5,801.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,841.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,040.0	0.00	0.00	5,881.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,080.0	0.00	0.00	5,921.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,120.0	0.00	0.00	5,961.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,160.0	0.00	0.00	6,001.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,041.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,240.0	0.00	0.00	6,081.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well IGO Farms J28-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4889.0ft (Original Well Elev)
Project:	SEC.28-T5N-R66W	MD Reference:	WELL @ 4889.0ft (Original Well Elev)
Site:	IGO Farms Pad Sec.28-T5N-R66W	North Reference:	True
Well:	IGO Farms J28-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (07-06-09)		

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	0.00	0.00	6,121.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,320.0	0.00	0.00	6,161.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,360.0	0.00	0.00	6,201.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,241.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,440.0	0.00	0.00	6,281.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,480.0	0.00	0.00	6,321.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,520.0	0.00	0.00	6,361.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,560.0	0.00	0.00	6,401.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,441.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,640.0	0.00	0.00	6,481.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,680.0	0.00	0.00	6,521.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,720.0	0.00	0.00	6,561.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,760.0	0.00	0.00	6,601.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,641.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,840.0	0.00	0.00	6,681.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,880.0	0.00	0.00	6,721.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,920.0	0.00	0.00	6,761.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
6,960.0	0.00	0.00	6,801.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,841.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,040.0	0.00	0.00	6,881.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,080.0	0.00	0.00	6,921.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,120.0	0.00	0.00	6,961.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,147.9	0.00	0.00	6,989.0	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
NIOBRARA									
7,160.0	0.00	0.00	7,001.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,200.0	0.00	0.00	7,041.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,240.0	0.00	0.00	7,081.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,280.0	0.00	0.00	7,121.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,320.0	0.00	0.00	7,161.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,360.0	0.00	0.00	7,201.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,400.0	0.00	0.00	7,241.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,440.0	0.00	0.00	7,281.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,480.0	0.00	0.00	7,321.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,487.9	0.00	0.00	7,329.0	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
CODELL									
7,520.0	0.00	0.00	7,361.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,560.0	0.00	0.00	7,401.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,600.0	0.00	0.00	7,441.1	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
7,637.9	0.00	0.00	7,479.0	-1,135.5	303.8	1,175.4	0.00	0.00	0.00
HARDLINE 76.5'S OF BHL									

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well IGO Farms J28-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4889.0ft (Original Well Elev)
Project:	SEC.28-T5N-R66W	MD Reference:	WELL @ 4889.0ft (Original Well Elev)
Site:	IGO Farms Pad Sec.28-T5N-R66W	North Reference:	True
Well:	IGO Farms J28-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (07-06-09)		

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 BHL 2560'F	0.00	0.00	5,800.0	-1,135.5	303.8	1,378,688.65	3,198,037.49	40° 22' 14.603 N	104° 47' 21.263 W
- plan hits target center									
- Point									
HARDLINE 76.5'S OF	0.00	0.00	7,479.0	-1,212.0	203.8	1,378,611.33	3,197,938.09	40° 22' 13.847 N	104° 47' 22.555 W
- plan misses target center by 125.9ft at 7637.9ft MD (7479.0 TVD, -1135.5 N, 303.8 E)									
- Polygon									
Point 1			7,479.0	0.0	0.0	1,378,611.33	3,197,938.09		
Point 2			7,479.0	0.0	200.0	1,378,612.93	3,198,138.07		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,147.9	6,989.0	NIOBRARA		0.00	
7,487.9	7,329.0	CODELL		0.00	