



## **Noble Energy Inc.**

**Weld County, CO**

**Sec 25, T4N, R66W**

**Irene G30-63-1HN**

**Wellbore #1**

**Survey: MWD** FINAL

## **DDC Survey Report**

**13 June, 2012**

<b>Company:</b>	Noble Energy Inc.	<b>Local Co-ordinate Reference:</b>	Well Irene G30-63-1HN
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4826.0usft (H&P #323)
<b>Site:</b>	Sec 25, T4N, R66W	<b>MD Reference:</b>	WELL @ 4826.0usft (H&P #323)
<b>Well:</b>	Irene G30-63-1HN	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	Sec 25, T4N, R66W		
<b>Site Position:</b>		<b>Northing:</b>	1,345,628.21 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,218,519.76 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40° 16' 46.200 N
		<b>Longitude:</b>	104° 43' 0.408 W
		<b>Grid Convergence:</b>	0.51 °

<b>Well</b>	Irene G30-63-1HN		
<b>Well Position</b>	<b>+N-S</b>	0.0 usft	<b>Northing:</b> 1,345,584.39 usft
	<b>+E-W</b>	0.0 usft	<b>Easting:</b> 3,218,508.99 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40° 16' 45.768 N
		<b>Longitude:</b>	104° 43' 0.552 W
		<b>Ground Level:</b>	4,802.0 usft

<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	4/26/2012	8.71	66.93	52,982

<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) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	91.23	

<b>Survey Program</b>	<b>Date</b> 6/13/2012			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
694.0	11,653.0	MWD (Wellbore #1)	MWD default	MWD - Standard

<b>Survey</b>									
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
632.0	0.00	0.00	632.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>TIE IN @ 632' MD / 632' TVD</b>									
632.1	0.00	298.10	632.1	0.0	0.0	0.0	0.00	0.00	0.00
694.0	0.70	298.10	694.0	0.2	-0.3	-0.3	1.13	1.13	0.00
970.0	0.90	285.20	970.0	1.5	-3.9	-3.9	0.10	0.07	-4.67
1,249.0	1.00	289.30	1,248.9	2.9	-8.3	-8.4	0.04	0.04	1.47
1,534.0	1.10	300.20	1,533.9	5.1	-13.0	-13.1	0.08	0.04	3.82
1,819.0	1.30	310.20	1,818.8	8.6	-17.9	-18.1	0.10	0.07	3.51
1,914.0	1.40	127.40	1,913.8	8.6	-17.8	-18.0	2.84	0.11	186.53
2,009.0	3.60	112.80	2,008.7	6.7	-14.1	-14.2	2.39	2.32	-15.37
2,104.0	5.90	117.40	2,103.4	3.3	-7.0	-7.1	2.45	2.42	4.84

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<b>Well:</b>	Irene G30-63-1HN	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,199.0	7.50	119.70	2,197.7	-2.0	2.7	2.7	1.71	1.68	2.42
2,294.0	8.80	130.40	2,291.8	-9.8	13.6	13.8	2.10	1.37	11.26
2,389.0	9.90	122.10	2,385.5	-18.8	26.1	26.5	1.83	1.16	-8.74
2,484.0	9.90	115.30	2,479.1	-26.7	40.4	40.9	1.23	0.00	-7.16
2,579.0	10.20	116.70	2,572.7	-33.9	55.3	56.0	0.41	0.32	1.47
2,674.0	11.20	116.70	2,666.0	-41.9	71.0	71.9	1.05	1.05	0.00
2,769.0	11.30	117.90	2,759.2	-50.4	87.5	88.6	0.27	0.11	1.26
2,864.0	11.50	119.70	2,852.3	-59.4	104.0	105.2	0.43	0.21	1.89
2,959.0	11.50	119.10	2,945.4	-68.7	120.5	121.9	0.13	0.00	-0.63
3,054.0	9.90	118.90	3,038.7	-77.3	135.9	137.5	1.68	-1.68	-0.21
3,149.0	9.50	118.10	3,132.4	-84.9	149.9	151.7	0.44	-0.42	-0.84
3,244.0	8.20	118.90	3,226.2	-91.9	162.8	164.7	1.37	-1.37	0.84
3,339.0	6.20	113.30	3,320.5	-97.2	173.4	175.5	2.23	-2.11	-5.89
3,434.0	6.60	120.00	3,414.9	-101.9	182.9	185.0	0.89	0.42	7.05
3,528.0	6.20	122.30	3,508.3	-107.4	191.8	194.1	0.51	-0.43	2.45
3,623.0	6.20	122.10	3,602.8	-112.8	200.5	202.9	0.02	0.00	-0.21
3,718.0	5.30	122.50	3,697.3	-117.9	208.6	211.1	0.95	-0.95	0.42
3,813.0	6.90	116.10	3,791.7	-122.8	217.4	220.0	1.83	1.68	-6.74
3,908.0	7.00	113.70	3,886.0	-127.6	227.8	230.5	0.32	0.11	-2.53
4,003.0	5.90	122.50	3,980.4	-132.6	237.2	240.0	1.55	-1.16	9.26
4,098.0	4.10	138.80	4,075.1	-137.7	243.6	246.5	2.40	-1.89	17.16
4,193.0	1.60	156.60	4,170.0	-141.5	246.4	249.3	2.76	-2.63	18.74
4,288.0	1.20	167.80	4,264.9	-143.7	247.1	250.1	0.51	-0.42	11.79
4,383.0	1.10	169.20	4,359.9	-145.6	247.5	250.6	0.11	-0.11	1.47
4,478.0	0.60	161.70	4,454.9	-146.9	247.8	250.9	0.54	-0.53	-7.89
4,573.0	0.40	146.20	4,549.9	-147.7	248.2	251.3	0.25	-0.21	-16.32
4,668.0	0.40	127.60	4,644.9	-148.2	248.6	251.7	0.14	0.00	-19.58
4,764.0	1.10	120.20	4,740.9	-148.8	249.7	252.8	0.73	0.73	-7.71
4,859.0	2.00	119.70	4,835.8	-150.1	251.9	255.1	0.95	0.95	-0.53
4,954.0	0.70	197.90	4,930.8	-151.5	253.2	256.3	2.08	-1.37	82.32
5,049.0	0.50	193.10	5,025.8	-152.4	252.9	256.1	0.22	-0.21	-5.05
5,144.0	0.30	197.70	5,120.8	-153.1	252.7	255.9	0.21	-0.21	4.84
5,429.0	0.60	13.50	5,405.8	-152.3	252.8	256.0	0.32	0.11	61.68
5,714.0	0.60	53.90	5,690.8	-150.0	254.4	257.5	0.15	0.00	14.18
5,999.0	0.80	213.30	5,975.8	-150.8	254.5	257.7	0.48	0.07	55.93
6,237.0	0.90	203.50	6,213.8	-153.9	252.8	256.1	0.07	0.04	-4.12
6,311.0	0.60	215.80	6,287.8	-154.7	252.4	255.6	0.46	-0.41	16.62
6,343.0	1.90	98.90	6,319.8	-155.0	252.8	256.1	6.99	4.06	-365.31
6,375.0	5.30	84.50	6,351.7	-154.9	254.8	258.1	10.91	10.63	-45.00
6,406.0	8.30	74.10	6,382.5	-154.2	258.4	261.6	10.42	9.68	-33.55
6,438.0	10.40	69.70	6,414.0	-152.5	263.3	266.5	6.93	6.56	-13.75
6,470.0	12.40	78.30	6,445.4	-150.8	269.4	272.6	8.19	6.25	26.88
6,501.0	15.20	82.20	6,475.5	-149.6	276.7	279.8	9.51	9.03	12.58

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Survey

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6,533.0	18.00	82.00	6,506.2	-148.3	285.7	288.8	8.75	8.75	-0.63
6,565.0	20.60	78.00	6,536.4	-146.5	296.1	299.2	9.11	8.13	-12.50
6,596.0	21.50	81.20	6,565.3	-144.5	307.1	310.1	4.71	2.90	10.32
6,628.0	22.30	82.20	6,595.0	-142.7	318.9	321.9	2.76	2.50	3.13
6,660.0	22.90	85.90	6,624.5	-141.5	331.1	334.1	4.82	1.88	11.56
6,691.0	23.70	87.70	6,653.0	-140.8	343.4	346.3	3.45	2.58	5.81
6,723.0	24.10	88.20	6,682.3	-140.3	356.3	359.2	1.40	1.25	1.56
<b>Crossed Lease Line @ 6745' MD / 6702' TVD</b>									
6,745.0	25.33	90.31	6,702.3	-140.2	365.5	368.4	6.88	5.60	9.57
6,755.0	25.90	91.20	6,711.3	-140.3	369.8	372.8	6.88	5.69	8.95
6,786.0	27.60	90.30	6,739.0	-140.5	383.8	386.7	5.64	5.48	-2.90
6,818.0	30.30	89.40	6,767.0	-140.4	399.3	402.2	8.55	8.44	-2.81
6,850.0	32.00	88.40	6,794.3	-140.1	415.8	418.7	5.55	5.31	-3.13
6,881.0	35.10	87.50	6,820.2	-139.5	432.9	435.8	10.13	10.00	-2.90
6,913.0	37.70	86.80	6,845.9	-138.5	451.9	454.8	8.23	8.13	-2.19
6,945.0	39.20	88.90	6,871.0	-137.8	471.8	474.6	6.21	4.69	6.56
6,977.0	41.20	89.20	6,895.4	-137.4	492.4	495.3	6.28	6.25	0.94
7,008.0	44.30	88.50	6,918.2	-137.0	513.5	516.3	10.12	10.00	-2.26
7,040.0	48.10	88.20	6,940.3	-136.3	536.6	539.4	11.89	11.88	-0.94
7,072.0	51.50	87.70	6,961.0	-135.5	561.0	563.8	10.69	10.63	-1.56
7,103.0	54.80	87.50	6,979.6	-134.4	585.8	588.5	10.66	10.65	-0.65
7,135.0	58.10	89.10	6,997.3	-133.6	612.4	615.1	11.12	10.31	5.00
7,167.0	61.50	87.50	7,013.4	-132.8	640.1	642.8	11.47	10.63	-5.00
7,198.0	65.00	86.80	7,027.3	-131.4	667.7	670.4	11.47	11.29	-2.26
7,230.0	66.00	85.70	7,040.6	-129.5	696.7	699.4	4.42	3.13	-3.44
7,262.0	69.20	86.40	7,052.8	-127.5	726.3	728.8	10.20	10.00	2.19
7,293.0	72.90	86.10	7,062.8	-125.6	755.5	758.0	11.97	11.94	-0.97
7,325.0	75.40	85.40	7,071.6	-123.3	786.2	788.7	8.09	7.81	-2.19
7,357.0	79.10	85.20	7,078.6	-120.7	817.3	819.7	11.58	11.56	-0.63
<b>Crossed Hard Line @ 7365' MD / 7080' TVD</b>									
7,365.0	80.12	85.60	7,080.1	-120.1	825.2	827.5	13.73	12.80	5.04
7,389.0	83.20	86.80	7,083.6	-118.5	848.8	851.2	13.73	12.82	4.99
7,462.0	88.70	86.90	7,088.7	-114.5	921.5	923.8	7.54	7.53	0.14
7,494.0	89.30	88.00	7,089.3	-113.1	953.5	955.7	3.92	1.88	3.44
7,557.0	90.40	88.90	7,089.4	-111.4	1,016.5	1,018.6	2.26	1.75	1.43
7,653.0	90.60	88.90	7,088.6	-109.6	1,112.4	1,114.5	0.21	0.21	0.00
7,747.0	90.80	90.50	7,087.4	-109.1	1,206.4	1,208.5	1.72	0.21	1.70
7,842.0	90.70	90.80	7,086.2	-110.2	1,301.4	1,303.5	0.33	-0.11	0.32
7,937.0	92.10	91.00	7,083.9	-111.6	1,396.4	1,398.4	1.49	1.47	0.21
8,033.0	91.40	90.30	7,080.9	-112.7	1,492.3	1,494.4	1.03	-0.73	-0.73
8,128.0	91.90	91.00	7,078.2	-113.8	1,587.3	1,589.4	0.91	0.53	0.74
8,223.0	91.90	90.10	7,075.1	-114.7	1,682.2	1,684.3	0.95	0.00	-0.95
8,318.0	91.90	90.80	7,071.9	-115.5	1,777.2	1,779.2	0.74	0.00	0.74
8,413.0	91.30	90.60	7,069.3	-116.6	1,872.1	1,874.2	0.67	-0.63	-0.21

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8,508.0	90.90	90.30	7,067.4	-117.4	1,967.1	1,969.2	0.53	-0.42	-0.32
8,603.0	91.30	91.30	7,065.6	-118.7	2,062.1	2,064.1	1.13	0.42	1.05
8,698.0	90.70	90.50	7,064.0	-120.2	2,157.0	2,159.1	1.05	-0.63	-0.84
8,793.0	90.90	90.80	7,062.6	-121.3	2,252.0	2,254.1	0.38	0.21	0.32
8,888.0	90.20	90.30	7,061.7	-122.2	2,347.0	2,349.1	0.91	-0.74	-0.53
8,983.0	91.40	89.90	7,060.4	-122.4	2,442.0	2,444.1	1.33	1.26	-0.42
9,078.0	89.60	87.50	7,059.6	-120.2	2,537.0	2,539.0	3.16	-1.89	-2.53
9,173.0	90.80	87.70	7,059.2	-116.2	2,631.9	2,633.8	1.28	1.26	0.21
9,267.0	91.50	88.90	7,057.3	-113.4	2,725.8	2,727.6	1.48	0.74	1.28
9,362.0	90.80	88.40	7,055.4	-111.2	2,820.8	2,822.5	0.91	-0.74	-0.53
9,457.0	89.80	89.90	7,054.9	-109.8	2,915.8	2,917.4	1.90	-1.05	1.58
9,552.0	89.90	89.60	7,055.2	-109.4	3,010.8	3,012.4	0.33	0.11	-0.32
9,616.0	91.00	90.60	7,054.7	-109.5	3,074.7	3,076.4	2.32	1.72	1.56
9,647.0	91.00	90.60	7,054.1	-109.8	3,105.7	3,107.4	0.00	0.00	0.00
9,743.0	90.80	91.00	7,052.6	-111.1	3,201.7	3,203.4	0.47	-0.21	0.42
9,837.0	90.30	91.50	7,051.7	-113.2	3,295.7	3,297.4	0.75	-0.53	0.53
9,932.0	89.60	91.90	7,051.8	-116.0	3,390.7	3,392.4	0.85	-0.74	0.42
10,027.0	92.30	91.30	7,050.2	-118.7	3,485.6	3,487.3	2.91	2.84	-0.63
10,122.0	91.50	93.40	7,047.1	-122.6	3,580.5	3,582.3	2.36	-0.84	2.21
10,217.0	91.20	93.30	7,044.9	-128.1	3,675.3	3,677.2	0.33	-0.32	-0.11
10,313.0	90.30	95.40	7,043.6	-135.4	3,771.0	3,773.0	2.38	-0.94	2.19
10,407.0	91.60	95.00	7,042.0	-143.9	3,864.6	3,866.8	1.45	1.38	-0.43
10,439.0	91.00	94.70	7,041.3	-146.6	3,896.4	3,898.7	2.10	-1.88	-0.94
10,502.0	90.10	94.00	7,040.7	-151.4	3,959.3	3,961.6	1.81	-1.43	-1.11
10,565.0	89.30	92.90	7,041.0	-155.2	4,022.1	4,024.6	2.16	-1.27	-1.75
10,597.0	88.70	92.10	7,041.6	-156.6	4,054.1	4,056.5	3.12	-1.88	-2.50
10,660.0	88.00	90.50	7,043.4	-158.0	4,117.1	4,119.5	2.77	-1.11	-2.54
10,692.0	88.10	90.10	7,044.5	-158.2	4,149.0	4,151.5	1.29	0.31	-1.25
10,755.0	88.00	88.70	7,046.6	-157.5	4,212.0	4,214.4	2.23	-0.16	-2.22
10,787.0	88.30	86.90	7,047.7	-156.3	4,244.0	4,246.3	5.70	0.94	-5.63
10,818.0	88.20	86.10	7,048.6	-154.4	4,274.9	4,277.2	2.60	-0.32	-2.58
10,882.0	88.40	85.40	7,050.5	-149.7	4,338.7	4,340.9	1.14	0.31	-1.09
10,977.0	87.90	84.70	7,053.6	-141.5	4,433.3	4,435.3	0.91	-0.53	-0.74
11,040.0	88.50	84.30	7,055.6	-135.4	4,496.0	4,497.8	1.14	0.95	-0.63
11,072.0	89.30	84.00	7,056.2	-132.2	4,527.8	4,529.6	2.67	2.50	-0.94
11,167.0	90.00	84.10	7,056.8	-122.3	4,622.3	4,623.8	0.74	0.74	0.11
11,198.0	90.10	84.30	7,056.7	-119.2	4,653.1	4,654.6	0.72	0.32	0.65
11,261.0	89.30	83.80	7,057.1	-112.7	4,715.8	4,717.1	1.50	-1.27	-0.79
11,356.0	90.80	84.70	7,057.0	-103.1	4,810.3	4,811.4	1.84	1.58	0.95
11,451.0	90.80	84.70	7,055.7	-94.4	4,904.9	4,905.8	0.00	0.00	0.00
11,546.0	90.50	84.80	7,054.6	-85.7	4,999.5	5,000.2	0.33	-0.32	0.11
11,595.0	90.20	84.10	7,054.3	-80.9	5,048.2	5,048.8	1.55	-0.61	-1.43
TD @ 11653' MD / 7054' TVD									

<b>Company:</b>	Noble Energy Inc.	<b>Local Co-ordinate Reference:</b>	Well Irene G30-63-1HN
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4826.0usft (H&P #323)
<b>Site:</b>	Sec 25, T4N, R66W	<b>MD Reference:</b>	WELL @ 4826.0usft (H&P #323)
<b>Well:</b>	Irene G30-63-1HN	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,653.0	90.20	84.10	7,054.1	-75.0	5,105.9	5,106.4	0.00	0.00	0.00	

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
632.1	632.1	0.0	0.0	TIE IN @ 632' MD / 632' TVD	
6,745.0	6,702.3	-140.2	365.5	Crossed Lease Line @ 6745' MD / 6702' TVD	
7,365.0	7,080.1	-120.1	825.2	Crossed Hard Line @ 7365' MD / 7080' TVD	
11,653.0	7,054.1	-75.0	5,105.9	TD @ 11653' MD / 7054' TVD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



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## Survey Certification Sheet

Noble Energy  
Company

RM-12380  
Job Number

6/13/2012  
Date

Sec 25, T4N, R66W  
Lease

Irene G30-63-1HN  
Well Name

Weld, CO  
County & State

Surveyed from a depth of: 632 feet to 11653 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: Boyd Wolff

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Digitally signed by Larry Wright  
DN: cn=Larry Wright, o=The  
Directional Drilling Company,  
ou=GM of Guidance Services,  
email=larryw@directionaldrillers.co  
m, c=US  
Date: 2012.06.13 16:22:27 -05'00'

Larry Wright  
MWD General Manager



Company Name: Noble Energy Inc.  
Irene G30-63-1HN  
Weld County, CO  
Rig: H&P #323  
Created By: Dina Chance  
Date: 6/13/2012

Irene G30-63-1HN  
Weld County, CO  
Q120331 & RM-12380



Azimuths to Grid North

Magnetic North: 8.21°

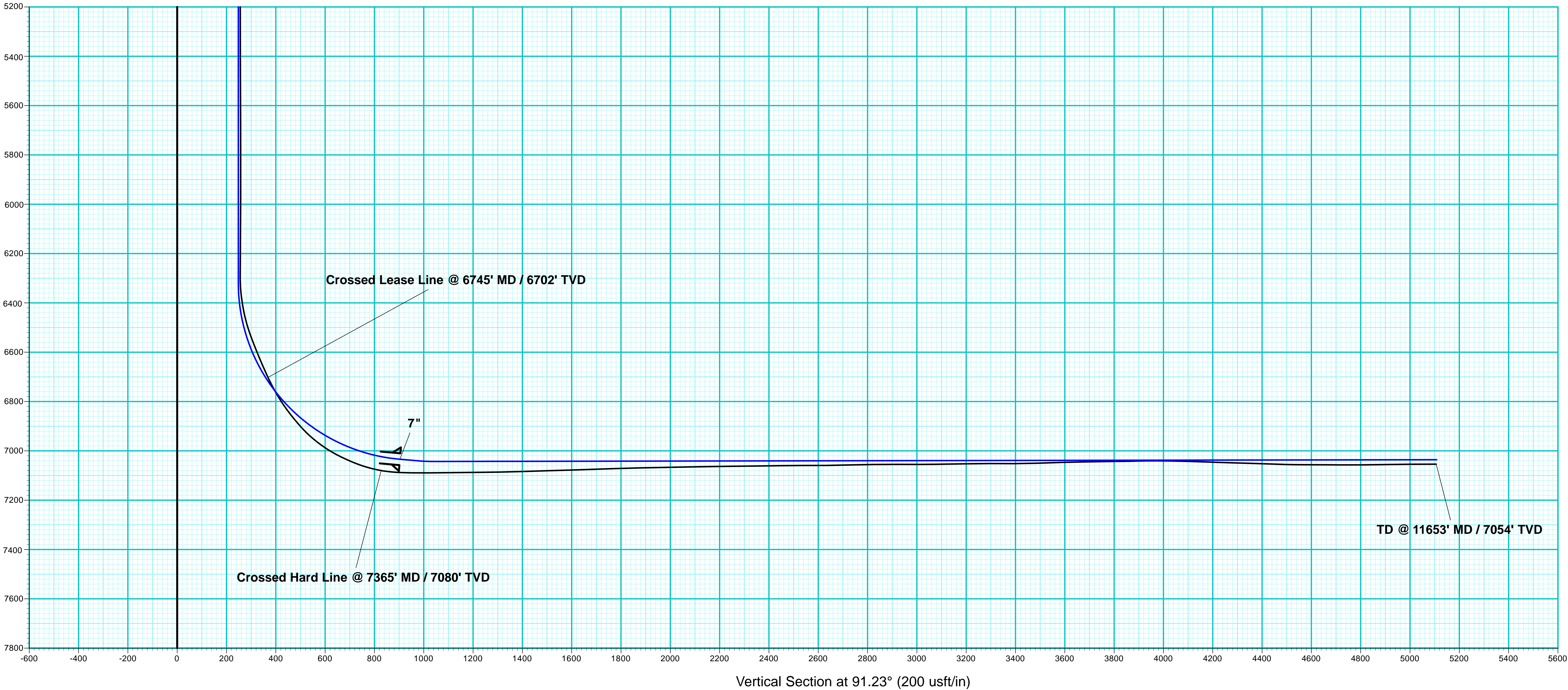
Magnetic Field Strength: 52982.2snT  
Dip Angle: 66.93°  
Date: 4/26/2012  
Model: IGRF2010

PROJECT DETAILS:		Weld County, CO
Geodetic System:	US State Plane 1983	
Datum:	North American Datum 1983	
Ellipsoid:	GRS 1980	
Zone:	Colorado Northern Zone	
System Datum:	Mean Sea Level	

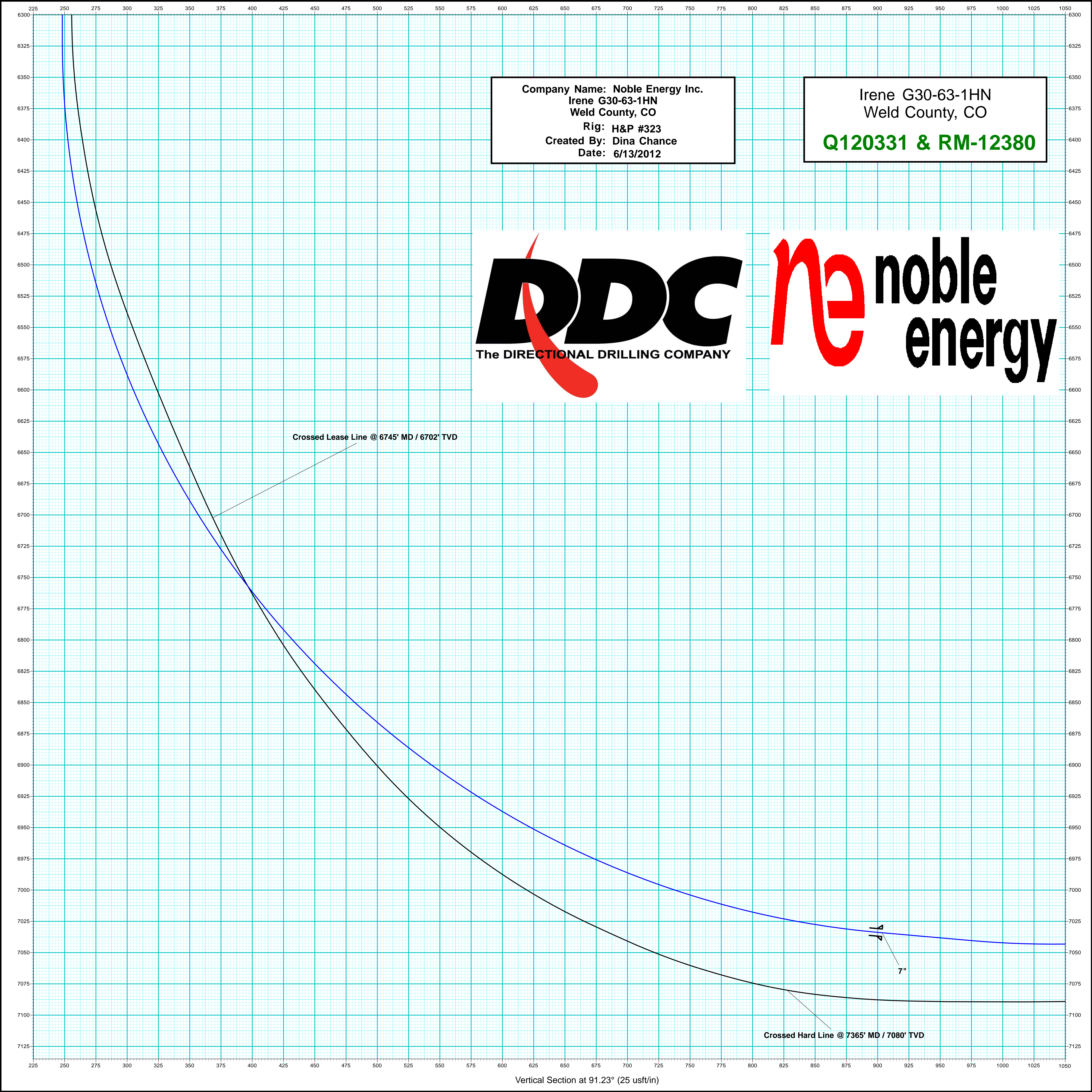
WELL DETAILS:		Irene G30-63-1HN				
+N/-S	+E/-W	Ground Level:		4802.0		
		Northing	Easting	Latitude	Longitude	
0.0	0.0	1345584.39	3218508.99	40° 16' 45.768 N	104° 43' 0.552 W	

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
TIE IN @ 632' MD / 632' TVD	632.0	0.0	0.0	1345584.39	3218508.99	40° 16' 45.768 N	104° 43' 0.552 W
- plan hits target center							
VP Irene 630-63-1HN	4136.0	-152.0	245.0	1345432.39	3218753.99	40° 16' 44.244 N	104° 42' 57.408 W
- plan hits target center							
PBHL Irene G30-63-1HN	7036.1	-109.2	5107.2	1345475.17	3223616.17	40° 16' 44.238 N	104° 41' 54.670 W
- plan hits target center							

ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
6745.0	25.33	90.31	6702.3	-140.2	365.5	368.4	470.3	Crossed Lease Line @ 6745' MD / 6702' TVD
7365.0	80.12	85.60	7080.1	-120.1	825.2	827.5	930.5	Crossed Hard Line @ 7365' MD / 7080' TVD
11653.0	90.20	84.10	7054.1	-75.0	5105.9	5106.4	5217.1	TD @ 11653' MD / 7054' TVD







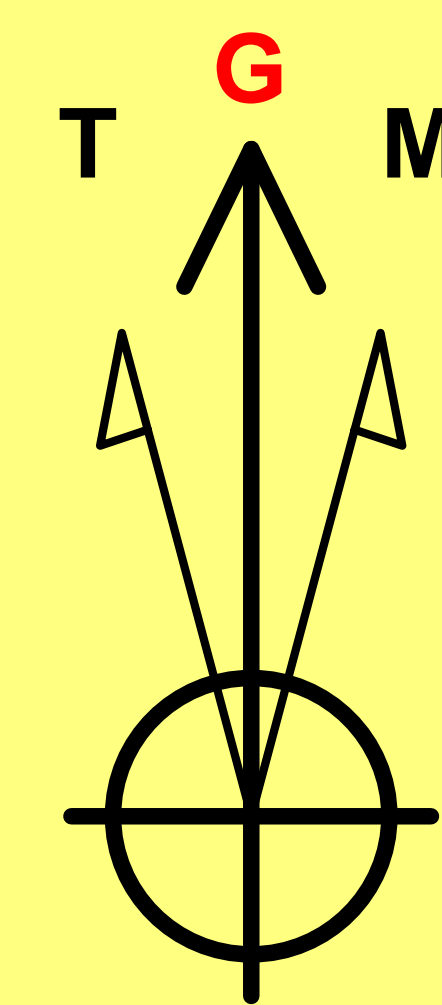
Company Name: Noble Energy Inc.  
Irene G30-63-1HN  
Weld County, CO  
Rig: H&P #323  
Created By: Dina Chance  
Date: 6/13/2012

Irene G30-63-1HN  
Weld County, CO  
**Q120331 & RM-12380**





Irene G30-63-1HN  
Weld County, CO  
**Q120331 & RM-12380**



Magnetic Field  
Strength: 52982.2snT  
Dip Angle: 66.93°  
Date: 4/26/2012  
Model: IGRF2010

<b>PROJECT DETAILS:</b>		<b>Weld County, CO</b>
<b>Geodetic System:</b>	<b>US State Plane 1983</b>	
<b>Datum:</b>	<b>North American Datum 1983</b>	
<b>Ellipsoid:</b>	<b>GRS 1980</b>	
<b>Zone:</b>	<b>Colorado Northern Zone</b>	
<b>System Datum:</b>	<b>Mean Sea Level</b>	

		WELL DETAILS:		Irene G30-63-1HN	
		Ground Level:		4802.0	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1345584.39	3218508.99	40° 16' 45.768 N	104° 43' 0.552 W

DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
TIE IN @ 632' MD / 632' TVD - plan hits target center	632.0	0.0	0.0	1345584.39	3218508.99	40° 16' 45.768 N	104° 43' 0.552 W	
VP Irene 630-63-1HN - plan hits target center	4136.0	-152.0	245.0	1345432.39	3218753.99	40° 16' 44.244 N	104° 42' 57.408 W	
PBHL Irene G30-63-1HN - plan hits target center	7036.1	-109.2	5107.2	1345475.17	3223616.17	40° 16' 44.238 N	104° 41' 54.670 W	

ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
6745.0	25.33	90.31	6702.3	-140.2	365.5	368.4	470.3	Crossed Lease Line @ 6745' MD / 6702' TVD
7365.0	80.12	85.60	7080.1	-120.1	825.2	827.5	930.5	Crossed Hard Line @ 7365' MD / 7080' TVD
11653.0	90.20	84.10	7054.1	-75.0	5105.9	5106.4	5217.1	TD @ 11653' MD / 7054' TVD

