



Noble Energy, Inc

Weld County, CO (NAD 83)

Sec 27-T6N-R63W (Wells Ranch USX AA27 Pad)

Wells Ranch USX AA27-69-1HN

Wellbore #1

Design: OH

Final Survey Report

03 September, 2013





IDS Final Survey Report



Company:	Noble Energy, Inc	Local Co-ordinate Reference:	Well Wells Ranch USX AA27-69-1HN
Project:	Weld County, CO (NAD 83)	TVD Reference:	WELL @ 4808.0usft (HP 277)
Site:	Sec 27-T6N-R63W (Wells Ranch USX AA27 Pad)	MD Reference:	WELL @ 4808.0usft (HP 277)
Well:	Wells Ranch USX AA27-69-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Weld County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 27-T6N-R63W (Wells Ranch USX AA27 Pad)			
Site Position:		Northing:	1,412,541.08 usft	Latitude:	40° 27' 39.276 N
From:	Lat/Long	Easting:	3,297,308.18 usft	Longitude:	104° 25' 53.472 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.69 °

Well	Wells Ranch USX AA27-69-1HN					
Well Position	+N-S	0.0 usft	Northing:	1,412,613.96 usft	Latitude:	40° 27' 39.996 N
	+E-W	0.0 usft	Easting:	3,297,310.09 usft	Longitude:	104° 25' 53.436 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,784.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/8/2013	8.41	67.08	52,981

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	77.33	

Survey Program	Date	9/3/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
321.0	598.0	MSS (Wellbore #1)	EMS	EMS - Standard	
727.0	11,447.0	MWD (Wellbore #1)	MWD	MWD - Standard	

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	
321.0	0.20	226.30	321.0	-0.4	-0.5	0.06	
598.0	0.00	312.20	598.0	-0.8	-0.9	0.07	
727.0	0.90	331.30	727.0	-1.2	-1.2	0.70	
First MWD							
819.0	0.90	321.90	819.0	-2.0	-1.7	0.16	
912.0	0.70	305.80	912.0	-2.9	-2.4	0.32	
1,005.0	0.70	312.90	1,005.0	-3.8	-3.1	0.09	
1,097.0	0.50	286.40	1,097.0	-4.6	-3.7	0.37	
1,191.0	0.70	275.80	1,191.0	-5.6	-4.6	0.24	
1,284.0	0.90	260.80	1,283.9	-6.9	-5.9	0.31	



IDS Final Survey Report



Company:	Noble Energy, Inc	Local Co-ordinate Reference:	Well Wells Ranch USX AA27-69-1HN
Project:	Weld County, CO (NAD 83)	TVD Reference:	WELL @ 4808.0usft (HP 277)
Site:	Sec 27-T6N-R63W (Wells Ranch USX AA27 Pad	MD Reference:	WELL @ 4808.0usft (HP 277)
Well:	Wells Ranch USX AA27-69-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
1,378.0	0.90	264.00	1,377.9	-8.3	-7.4	0.05	
1,470.0	0.80	261.00	1,469.9	-9.7	-8.7	0.12	
1,565.0	0.60	255.70	1,564.9	-10.8	-9.9	0.22	
1,660.0	0.50	202.90	1,659.9	-11.5	-10.6	0.52	
1,755.0	0.70	225.50	1,754.9	-12.0	-11.4	0.32	
1,850.0	0.50	197.30	1,849.9	-12.6	-12.1	0.37	
1,945.0	1.20	197.70	1,944.9	-13.0	-12.8	0.74	
2,041.0	1.20	206.00	2,040.9	-13.8	-13.9	0.18	
2,136.0	1.00	217.00	2,135.9	-14.7	-15.2	0.31	
2,231.0	0.90	210.70	2,230.8	-15.6	-16.3	0.15	
2,326.0	0.90	225.30	2,325.8	-16.5	-17.5	0.24	
2,421.0	0.80	236.30	2,420.8	-17.6	-18.7	0.20	
2,516.0	0.90	265.70	2,515.8	-18.9	-20.1	0.47	
2,612.0	1.10	277.70	2,611.8	-20.5	-21.7	0.30	
2,707.0	2.70	344.80	2,706.7	-22.0	-22.6	2.62	
2,802.0	4.00	11.90	2,801.6	-21.9	-21.4	2.12	
2,897.0	5.80	14.80	2,896.2	-20.0	-17.8	1.91	
2,992.0	8.10	6.70	2,990.5	-18.0	-13.3	2.63	
3,087.0	9.20	3.60	3,084.5	-16.7	-9.0	1.26	
3,182.0	9.60	3.60	3,178.2	-15.8	-4.6	0.42	
3,278.0	10.60	359.40	3,272.7	-15.4	-0.5	1.29	
3,373.0	11.70	0.00	3,365.9	-15.4	3.4	1.16	
3,468.0	11.00	350.30	3,459.0	-17.0	6.0	2.14	
3,563.0	9.70	348.70	3,552.5	-20.1	6.6	1.40	
3,658.0	12.00	340.60	3,645.8	-24.9	5.7	2.90	
3,753.0	13.70	340.50	3,738.4	-32.0	3.2	1.79	
3,848.0	14.60	340.50	3,830.5	-39.7	0.4	0.95	
3,944.0	15.20	340.60	3,923.3	-47.9	-2.5	0.63	
4,039.0	14.20	340.60	4,015.2	-55.9	-5.3	1.05	
4,134.0	13.20	348.60	4,107.5	-61.9	-6.4	2.25	
4,229.0	12.30	348.20	4,200.2	-66.2	-6.1	0.95	
4,324.0	10.40	347.90	4,293.3	-70.0	-5.8	2.00	
4,419.0	9.60	347.20	4,386.9	-73.6	-5.7	0.85	
4,515.0	11.90	355.10	4,481.2	-76.2	-4.4	2.84	
4,610.0	10.80	351.90	4,574.3	-78.3	-2.4	1.33	
4,706.0	11.50	1.10	4,668.5	-79.4	0.6	1.99	
4,800.0	11.10	359.40	4,760.7	-79.3	4.7	0.55	
4,896.0	10.30	355.00	4,855.0	-80.1	7.8	1.19	
4,991.0	11.80	351.10	4,948.2	-82.4	9.6	1.76	
5,086.0	14.20	355.30	5,040.8	-84.8	11.8	2.71	
5,181.0	12.80	353.90	5,133.2	-86.9	14.6	1.51	
5,277.0	13.40	357.20	5,226.7	-88.6	17.8	1.00	
5,372.0	14.90	354.70	5,318.8	-90.2	21.2	1.70	
5,467.0	14.10	349.80	5,410.8	-93.4	23.3	1.54	
5,562.0	15.90	353.80	5,502.5	-96.9	25.3	2.18	



IDS Final Survey Report



Company:	Noble Energy, Inc	Local Co-ordinate Reference:	Well Wells Ranch USX AA27-69-1HN
Project:	Weld County, CO (NAD 83)	TVD Reference:	WELL @ 4808.0usft (HP 277)
Site:	Sec 27-T6N-R63W (Wells Ranch USX AA27 Pad	MD Reference:	WELL @ 4808.0usft (HP 277)
Well:	Wells Ranch USX AA27-69-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey						
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,657.0	14.20	353.10	5,594.3	-99.7	27.9	1.80
5,752.0	14.90	350.90	5,686.2	-103.0	29.8	0.94
5,847.0	13.00	350.50	5,778.4	-106.7	31.2	2.00
5,940.0	13.30	345.70	5,869.0	-111.1	31.5	1.22
6,035.0	15.50	354.80	5,961.0	-114.9	32.8	3.32
6,083.0	19.90	2.20	6,006.7	-115.2	35.7	10.28
6,131.0	23.30	8.10	6,051.4	-113.5	41.2	8.40
6,178.0	27.50	15.20	6,093.8	-109.4	49.6	11.02
6,226.0	31.30	17.50	6,135.6	-102.7	61.0	8.26
6,273.0	36.00	19.50	6,174.7	-94.4	74.5	10.27
6,321.0	39.00	24.00	6,212.8	-83.6	91.1	8.46
6,368.0	41.80	31.40	6,248.6	-69.4	110.8	11.81
6,416.0	43.20	38.40	6,284.0	-50.9	134.7	10.27
6,464.0	44.80	44.60	6,318.6	-28.8	161.7	9.57
6,511.0	46.40	50.10	6,351.5	-4.1	190.8	9.02
6,559.0	48.70	55.20	6,383.9	24.1	223.0	9.19
6,606.0	51.40	60.20	6,414.1	54.5	256.9	9.97
6,654.0	54.30	62.90	6,443.1	88.2	293.7	7.52
6,701.0	56.00	66.60	6,469.9	123.1	331.4	7.40
6,749.0	57.50	69.70	6,496.3	160.3	371.0	6.24
6,797.0	59.60	73.20	6,521.3	199.1	411.7	7.60
6,844.0	62.10	76.00	6,544.2	238.7	452.7	7.44
6,892.0	63.50	77.60	6,566.1	280.3	495.4	4.16
6,939.0	64.50	80.60	6,586.7	321.7	537.6	6.12
6,987.0	67.40	84.50	6,606.3	365.2	581.2	9.57
7,035.0	72.00	86.60	6,623.0	410.0	625.8	10.42
7,082.0	76.40	87.60	6,635.8	455.2	670.3	9.58
7,158.0	83.20	87.00	6,649.2	529.9	743.9	8.98
7,222.0	83.40	87.30	6,656.7	593.4	806.6	0.56
7,317.0	90.80	88.50	6,661.5	688.1	899.8	7.89
7,412.0	93.20	90.10	6,658.2	783.0	992.6	3.04
7,507.0	93.50	89.50	6,652.6	877.9	1,085.2	0.71
7,603.0	92.20	89.30	6,647.8	973.7	1,179.0	1.37
7,698.0	87.10	87.30	6,648.4	1,068.7	1,272.2	5.77
7,793.0	85.50	87.30	6,654.5	1,163.4	1,365.6	1.68
7,888.0	88.70	90.00	6,659.4	1,258.2	1,458.6	4.40
7,983.0	94.00	90.70	6,657.1	1,353.1	1,551.1	5.63
8,078.0	92.90	90.10	6,651.4	1,447.9	1,643.5	1.32
8,173.0	92.50	89.90	6,646.9	1,542.8	1,736.1	0.47
8,269.0	89.70	88.90	6,645.1	1,638.8	1,829.9	3.10
8,364.0	90.40	89.20	6,645.0	1,733.8	1,922.9	0.80
8,459.0	87.90	89.50	6,646.4	1,828.8	2,015.8	2.65
8,554.0	88.20	89.40	6,649.6	1,923.7	2,108.7	0.33
8,649.0	88.50	88.80	6,652.4	2,018.7	2,201.6	0.71



IDS Final Survey Report



Company:	Noble Energy, Inc	Local Co-ordinate Reference:	Well Wells Ranch USX AA27-69-1HN
Project:	Weld County, CO (NAD 83)	TVD Reference:	WELL @ 4808.0usft (HP 277)
Site:	Sec 27-T6N-R63W (Wells Ranch USX AA27 Pad	MD Reference:	WELL @ 4808.0usft (HP 277)
Well:	Wells Ranch USX AA27-69-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
8,745.0	90.10	89.00	6,653.5	2,114.6	2,295.7	1.68	
8,840.0	91.00	89.60	6,652.6	2,209.6	2,388.6	1.14	
8,935.0	91.90	88.90	6,650.2	2,304.6	2,481.5	1.20	
9,030.0	90.80	88.80	6,648.0	2,399.5	2,574.6	1.16	
9,125.0	92.30	88.60	6,645.4	2,494.5	2,667.7	1.59	
9,221.0	92.90	89.40	6,641.1	2,590.4	2,761.6	1.04	
9,316.0	90.40	90.10	6,638.3	2,685.3	2,854.3	2.73	
9,411.0	89.70	89.10	6,638.3	2,780.3	2,947.1	1.28	
9,506.0	89.60	89.30	6,638.8	2,875.3	3,040.1	0.24	
9,602.0	88.10	89.30	6,640.8	2,971.3	3,134.0	1.56	
9,697.0	88.70	89.40	6,643.4	3,066.2	3,226.9	0.64	
9,792.0	90.00	88.80	6,644.5	3,161.2	3,319.9	1.51	
9,887.0	88.50	91.30	6,645.7	3,256.2	3,412.5	3.07	
9,983.0	89.90	91.70	6,647.1	3,352.1	3,505.6	1.52	
10,078.0	91.40	92.00	6,646.0	3,447.1	3,597.6	1.61	
10,173.0	90.60	91.50	6,644.3	3,542.0	3,689.5	0.99	
10,268.0	92.20	91.80	6,642.0	3,636.9	3,781.6	1.71	
10,363.0	90.80	91.20	6,639.5	3,731.9	3,873.6	1.60	
10,459.0	90.30	90.20	6,638.6	3,827.9	3,967.0	1.16	
10,554.0	90.30	88.20	6,638.1	3,922.8	4,060.0	2.11	
10,649.0	91.60	87.30	6,636.5	4,017.8	4,153.4	1.66	
10,744.0	90.90	89.00	6,634.5	4,112.7	4,246.7	1.93	
10,839.0	90.50	88.40	6,633.3	4,207.6	4,339.8	0.76	
10,934.0	90.70	87.80	6,632.3	4,302.6	4,433.1	0.67	
11,030.0	89.30	89.20	6,632.3	4,398.6	4,527.3	2.06	
11,125.0	89.90	89.40	6,633.0	4,493.5	4,620.3	0.67	
11,220.0	91.40	89.20	6,631.9	4,588.5	4,713.2	1.59	
11,315.0	89.60	90.00	6,631.1	4,683.5	4,806.0	2.07	
11,380.0	90.20	90.10	6,631.2	4,748.5	4,869.4	0.94	
Last MWD @ 11380' MD / 6631' TVD							
11,447.0	90.20	90.10	6,630.9	4,815.5	4,934.7	0.00	
PTD @ 11447' MD / 6631' TVD / 330' FNL & 144' FEL							

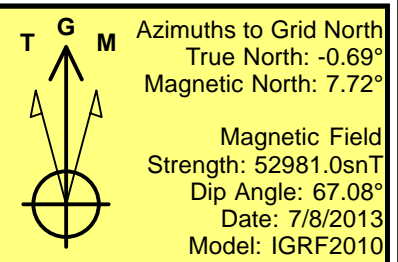
Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
727.0	727.0	0.2	-1.2	First MWD
11,380.0	6,631.2	1,078.3	4,748.5	Last MWD @ 11380' MD / 6631' TVD
11,447.0	6,630.9	1,078.2	4,815.5	PTD @ 11447' MD / 6631' TVD / 330' FNL & 144' FEL

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



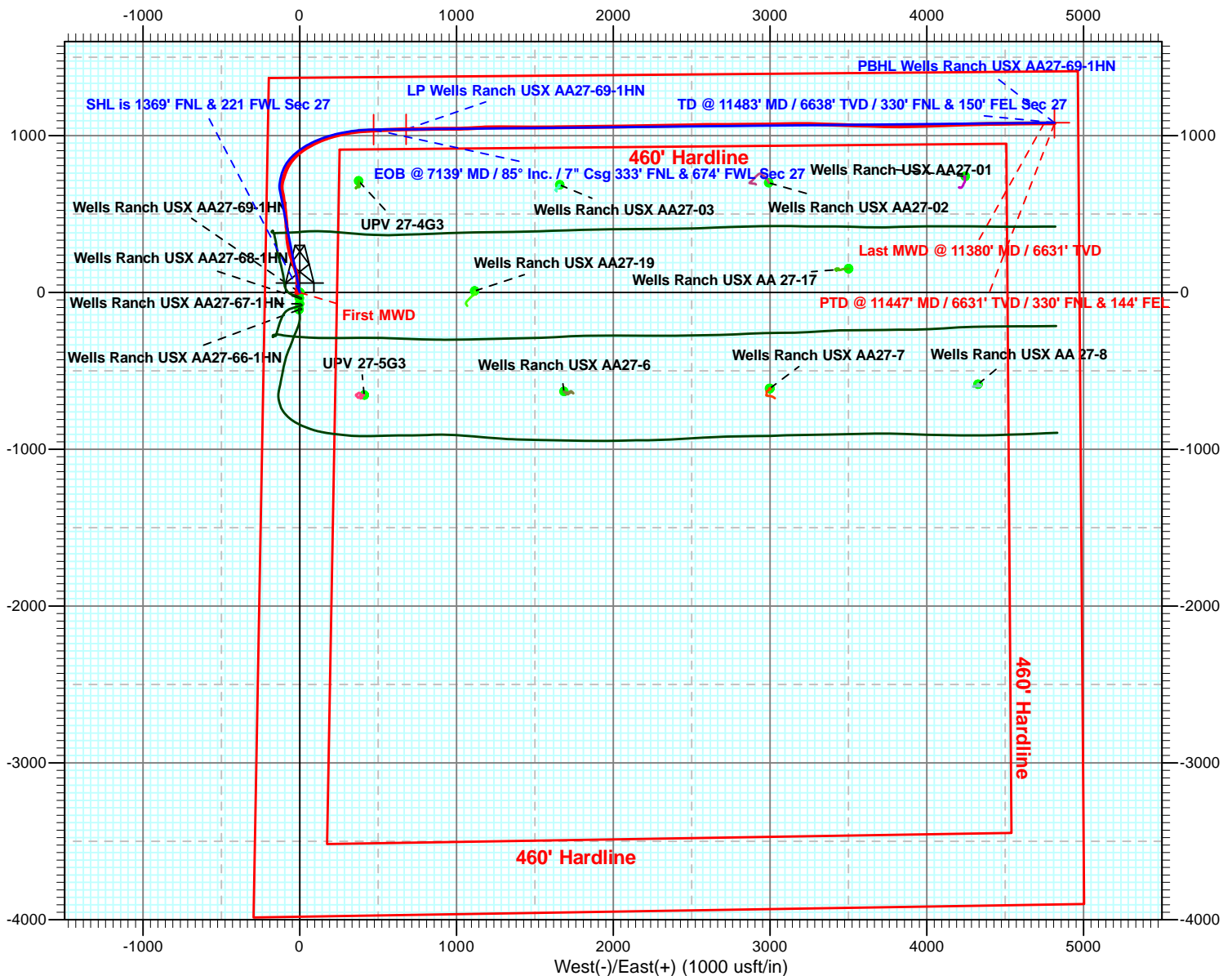
Weld County, CO (NAD 83)
Sec 27-T6N-R63W (Wells Ranch USX AA27 Pad)
Wells Ranch USX AA27-69-1HN

HP 277
Plan #1



LEGEND

- ✗ Wells Ranch USX AA27-69-1HN, Wellbore #1, OH V0
- △ UPV 27-4G3, Wellbore #1, OH V0
- ✗ UPV 27-5G3, Wellbore #1, OH V0
- ◇ Wells Ranch USX AA 27-17, Wellbore #1, OH V0
- ⊥ Wells Ranch USX AA 27-8, Wellbore #1, OH V0
- Wells Ranch USX AA27-02, Wellbore #1, OH V0
- ⊥ Wells Ranch USX AA27-01, Wellbore #1, OH V0
- ⊥ Wells Ranch USX AA27-03, Wellbore #1, OH V0
- △ Wells Ranch USX AA27-19, Wellbore #1, OH V0
- ✗ Wells Ranch USX AA27-6, Wellbore #1, OH V0
- Wells Ranch USX AA27-66-1HN, Wellbore #1, OH V0
- ◇ Wells Ranch USX AA27-67-1HN, Wellbore #1, OH V0
- ✗ Wells Ranch USX AA27-68-1HN, Wellbore #1, OH V0
- ⊥ Wells Ranch USX AA27-7, Wellbore #1, OH V0
- ◇ Plan #1



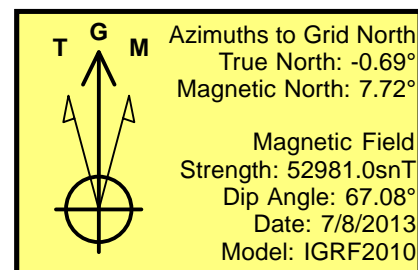


Weld County, CO (NAD 83)
Sec 27-T6N-R63W (Wells Ranch USX AA27 Pad)

Wells Ranch USX AA27-69-1HN

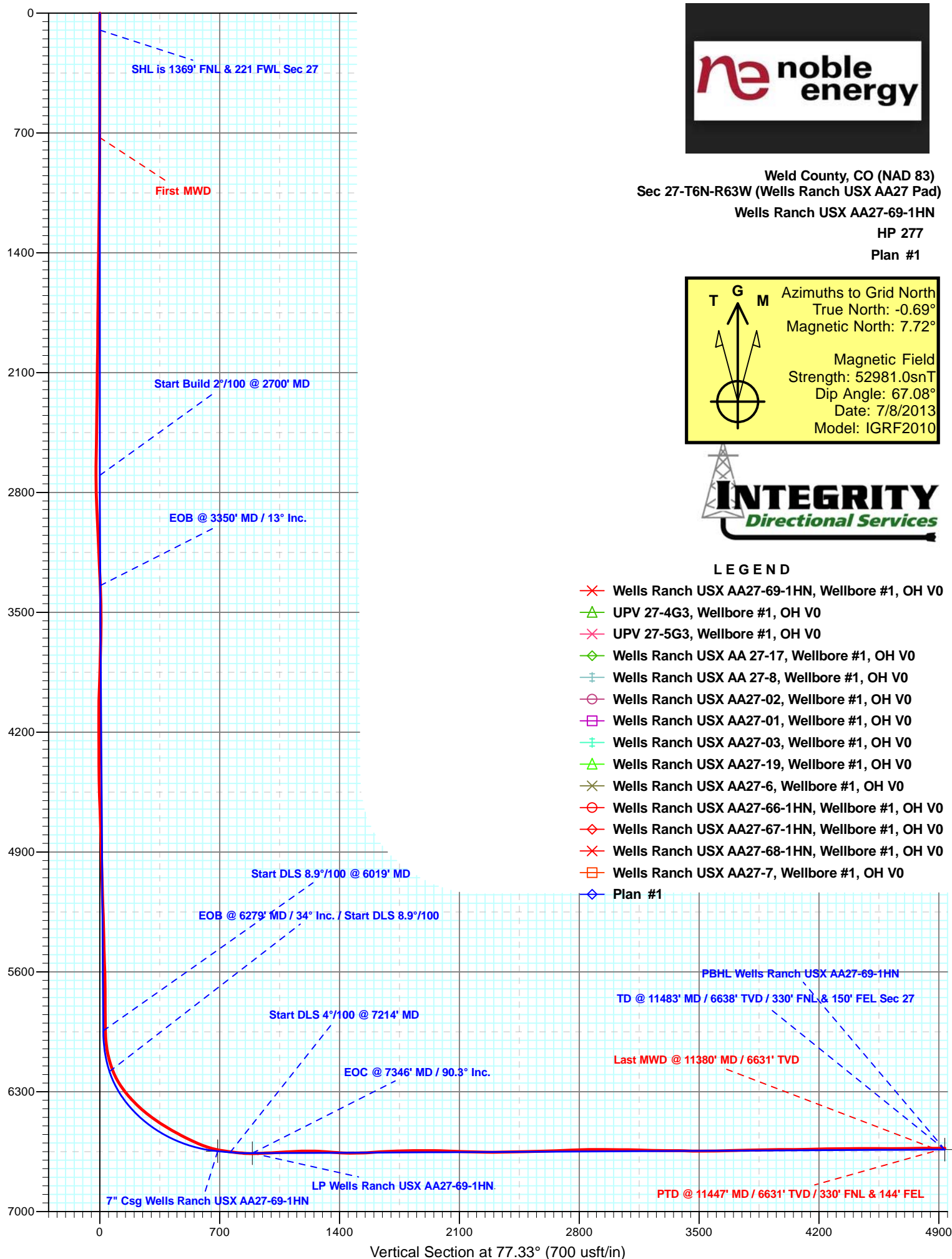
HP 277

Plan #1



LEGEND

- ✗ Wells Ranch USX AA27-69-1HN, Wellbore #1, OH V0
- △ UPV 27-4G3, Wellbore #1, OH V0
- ✗ UPV 27-5G3, Wellbore #1, OH V0
- ◇ Wells Ranch USX AA 27-17, Wellbore #1, OH V0
- ⊕ Wells Ranch USX AA 27-8, Wellbore #1, OH V0
- Wells Ranch USX AA27-02, Wellbore #1, OH V0
- Wells Ranch USX AA27-01, Wellbore #1, OH V0
- ⊕ Wells Ranch USX AA27-03, Wellbore #1, OH V0
- △ Wells Ranch USX AA27-19, Wellbore #1, OH V0
- ✗ Wells Ranch USX AA27-6, Wellbore #1, OH V0
- Wells Ranch USX AA27-66-1HN, Wellbore #1, OH V0
- ◇ Wells Ranch USX AA27-67-1HN, Wellbore #1, OH V0
- ✗ Wells Ranch USX AA27-68-1HN, Wellbore #1, OH V0
- Wells Ranch USX AA27-7, Wellbore #1, OH V0
- ◇ Plan #1





Job Number: CO13415NB

Company: Noble Energy

Lease/Well: Wells Ranch USX AA-27-69-1HN

Location: County rd. 68

Rig Name: H&P 277

RKB: 24'

G.L. or M.S.L.: 4784' GL

State/Country: Colorado, USA

Declination: 7.72

Grid: 0.69 North

File name: C:\WINSERVE\CO13415.SVY

Date/Time: 04-Sep-13 / 05:24

Curve Name: Wells Ranch USX AA-27-69-1HN

Integrity Directional Services

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 77.33

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>C L O S U R E Distance FT</i>	<i>Direction Deg</i>	<i>Dogleg Severity Deg/100</i>
Tied Into Gyro									
598.00	.00	.00	598.00	-.72	-.75	-.89	1.04	226.30	.00
First MWD Survey									
727.00	.90	331.30	726.99	.17	-1.24	-1.17	1.25	277.69	.70
819.00	.90	321.90	818.98	1.37	-2.03	-1.68	2.45	303.96	.16
912.00	.70	305.80	911.97	2.28	-2.95	-2.37	3.72	307.71	.32
1005.00	.70	312.90	1004.97	3.00	-3.82	-3.07	4.86	308.09	.09
1097.00	.50	286.40	1096.96	3.49	-4.62	-3.74	5.79	307.09	.37
1191.00	.70	275.80	1190.96	3.67	-5.58	-4.64	6.68	303.29	.24
1284.00	.90	260.80	1283.95	3.61	-6.87	-5.91	7.76	297.70	.31
1378.00	.90	264.00	1377.94	3.41	-8.33	-7.38	9.00	292.26	.05
1470.00	.80	261.00	1469.93	3.24	-9.69	-8.74	10.21	288.47	.12
1565.00	.60	255.70	1564.92	3.01	-10.82	-9.90	11.23	285.54	.22
1660.00	.50	202.90	1659.91	2.50	-11.47	-10.64	11.74	282.32	.52
1755.00	.70	225.50	1754.91	1.72	-12.04	-11.37	12.16	278.11	.32
1850.00	.50	197.30	1849.90	.91	-12.58	-12.07	12.61	274.15	.37
1945.00	1.20	197.70	1944.89	-.43	-13.00	-12.78	13.01	268.10	.74
2041.00	1.20	206.00	2040.87	-2.29	-13.75	-13.92	13.94	260.54	.18
2136.00	1.00	217.00	2135.85	-3.85	-14.69	-15.17	15.18	255.32	.31
2231.00	.90	210.70	2230.84	-5.15	-15.57	-16.32	16.40	251.69	.15
2326.00	.90	225.30	2325.83	-6.32	-16.48	-17.46	17.65	249.02	.24
2421.00	.80	236.30	2420.82	-7.21	-17.56	-18.71	18.98	247.67	.20
2516.00	.90	265.70	2515.81	-7.63	-18.85	-20.07	20.34	247.96	.47

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2612.00	1.10	277.70	2611.80	-7.57	-20.52	-21.68	21.87	249.76	.30
2707.00	2.70	344.80	2706.75	-5.29	-22.01	-22.63	22.64	256.50	2.62
2802.00	4.00	11.90	2801.59	.12	-21.91	-21.35	21.91	270.30	2.12
2897.00	5.80	14.80	2896.24	8.00	-20.00	-17.76	21.54	291.80	1.91
2992.00	8.10	6.70	2990.54	19.29	-18.00	-13.33	26.38	316.99	2.63
3087.00	9.20	3.60	3084.46	33.52	-16.74	-8.98	37.46	333.46	1.26
3182.00	9.60	3.60	3178.18	49.00	-15.76	-4.63	51.48	342.17	.42
3278.00	10.60	359.40	3272.69	65.82	-15.35	-.54	67.59	346.87	1.29
3373.00	11.70	.00	3365.90	84.19	-15.45	3.40	85.60	349.60	1.16
3468.00	11.00	350.30	3459.05	102.76	-16.97	5.98	104.15	350.62	2.14
3563.00	9.70	348.70	3552.50	119.54	-20.07	6.64	121.21	350.47	1.40
3658.00	12.00	340.60	3645.80	136.71	-24.92	5.67	138.96	349.67	2.90
3753.00	13.70	340.50	3738.42	156.63	-31.95	3.18	159.86	348.47	1.79
3848.00	14.60	340.50	3830.53	178.52	-39.71	.42	182.88	347.46	.95
3944.00	15.20	340.60	3923.31	201.80	-47.93	-2.50	207.41	346.64	.63
4039.00	14.20	340.60	4015.20	224.54	-55.93	-5.32	231.40	346.01	1.05
4134.00	13.20	348.60	4107.50	246.16	-61.95	-6.45	253.84	345.87	2.25
4229.00	12.30	348.20	4200.16	266.70	-66.16	-6.05	274.78	346.07	.95
4324.00	10.40	347.90	4293.29	284.99	-70.03	-5.81	293.47	346.19	2.00
4419.00	9.60	347.20	4386.85	301.10	-73.58	-5.75	309.96	346.27	.85
4515.00	11.90	355.10	4481.16	318.77	-76.20	-4.43	327.75	346.56	2.84
4610.00	10.80	351.90	4574.31	337.34	-78.29	-2.39	346.31	346.93	1.33
4705.00	11.50	1.10	4667.52	355.62	-79.36	.57	364.37	347.42	2.01
4800.00	11.10	359.40	4760.68	374.24	-79.28	4.74	382.54	348.04	.55
4896.00	10.30	355.00	4855.01	392.03	-80.12	7.81	400.13	348.45	1.19
4991.00	11.80	351.10	4948.25	410.09	-82.37	9.59	418.28	348.64	1.76
5086.00	14.20	355.30	5040.81	431.30	-84.82	11.84	439.56	348.87	2.71
5181.00	12.80	353.90	5133.18	453.38	-86.90	14.66	461.63	349.15	1.51
5277.00	13.40	357.20	5226.68	475.06	-88.57	17.78	483.25	349.44	1.00
5372.00	14.90	354.70	5318.80	498.22	-90.24	21.24	506.33	349.73	1.70
5467.00	14.10	349.80	5410.78	521.77	-93.41	23.30	530.07	349.85	1.54
5562.00	15.90	353.80	5502.54	546.10	-96.87	25.27	554.63	349.94	2.18
5657.00	14.20	353.10	5594.28	570.61	-99.67	27.91	579.25	350.09	1.80
5752.00	14.90	350.90	5686.23	594.24	-103.01	29.84	603.10	350.17	.94
5847.00	13.00	350.50	5778.42	616.84	-106.70	31.19	626.00	350.19	2.00
5940.00	13.30	345.70	5868.99	637.52	-111.07	31.47	647.12	350.12	1.22
6035.00	15.50	354.80	5961.01	660.76	-114.92	32.81	670.67	350.13	3.32
6083.00	19.90	2.20	6006.73	675.31	-115.19	35.74	685.07	350.32	10.28
6131.00	23.30	8.10	6051.36	692.88	-113.54	41.20	702.12	350.69	8.40
6178.00	27.50	15.20	6093.82	712.57	-109.38	49.58	720.92	351.27	11.02
6226.00	31.30	17.50	6135.63	735.17	-102.72	61.03	742.31	352.05	8.26
6273.00	36.00	19.50	6174.74	759.84	-94.43	74.53	765.69	352.92	10.27
6321.00	39.00	24.00	6212.83	786.95	-83.58	91.06	791.38	353.94	8.46
6368.00	41.80	31.40	6248.64	813.85	-69.39	110.81	816.81	355.13	11.81
6416.00	43.20	38.40	6284.05	840.40	-50.84	134.73	841.93	356.54	10.27

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
6464.00	44.80	44.60	6318.59	865.33	-28.75	161.75	865.81	358.10	9.57
6511.00	46.40	50.10	6351.48	888.05	-4.05	190.82	888.05	359.74	9.02
6559.00	48.70	55.20	6383.89	909.49	24.10	223.00	909.81	1.52	9.19
6606.00	51.40	60.20	6414.08	928.71	54.55	256.92	930.31	3.36	9.97
6654.00	54.30	62.90	6443.07	946.91	88.19	293.73	951.01	5.32	7.52
6701.00	56.00	66.60	6469.93	963.35	123.07	331.37	971.18	7.28	7.40
6749.00	57.50	69.70	6496.25	978.28	160.32	370.99	991.33	9.31	6.24
6797.00	59.60	73.20	6521.30	991.29	199.13	411.71	1011.09	11.36	7.60
6844.00	62.10	76.00	6544.20	1002.17	238.70	452.70	1030.21	13.40	7.44
6892.00	63.50	77.60	6566.14	1011.92	280.26	495.39	1050.01	15.48	4.16
6939.00	64.50	80.60	6586.74	1019.90	321.74	537.60	1069.45	17.51	6.12
6987.00	67.40	84.50	6606.31	1025.57	365.19	581.24	1088.64	19.60	9.57
7035.00	72.00	86.60	6622.96	1029.05	410.06	625.78	1107.74	21.73	10.42
7082.00	76.40	87.60	6635.75	1031.33	455.21	670.33	1127.32	23.82	9.58
7158.00	83.20	87.00	6649.20	1034.85	529.88	743.96	1162.63	27.11	8.98
7222.00	83.40	87.30	6656.67	1038.01	593.37	806.59	1195.64	29.75	.56
7317.00	90.80	88.50	6661.47	1041.49	688.11	899.79	1248.28	33.45	7.89
7412.00	93.20	90.10	6658.16	1042.65	783.04	992.66	1303.94	36.91	3.04
7507.00	93.50	89.50	6652.61	1042.98	877.88	1085.26	1363.26	40.09	.71
7603.00	92.20	89.30	6647.83	1043.98	973.75	1179.02	1427.62	43.01	1.37
7698.00	87.10	87.30	6648.41	1046.80	1068.67	1272.25	1495.94	45.59	5.77
7793.00	85.50	87.20	6654.55	1051.35	1163.36	1365.63	1568.04	47.90	1.69
7888.00	88.70	90.00	6659.35	1053.66	1258.19	1458.66	1641.11	50.06	4.47
7983.00	94.00	90.70	6657.11	1053.08	1353.13	1551.15	1714.62	52.11	5.63
8078.00	92.90	90.10	6651.40	1052.42	1447.95	1643.52	1790.01	53.99	1.32
8173.00	92.50	89.90	6646.92	1052.42	1542.84	1736.11	1867.61	55.70	.47
8269.00	89.70	88.80	6645.08	1053.51	1638.81	1829.97	1948.22	57.27	3.13
8364.00	90.40	89.20	6645.00	1055.17	1733.79	1923.01	2029.63	58.68	.85
8459.00	87.90	89.50	6646.41	1056.24	1828.77	2015.91	2111.88	59.99	2.65
8554.00	88.20	89.40	6649.64	1057.16	1923.71	2108.74	2195.05	61.21	.33
8649.00	88.50	88.80	6652.37	1058.65	2018.66	2201.70	2279.41	62.33	.71
8745.00	90.10	89.00	6653.55	1060.49	2114.63	2295.74	2365.65	63.37	1.68
8840.00	91.00	89.60	6652.63	1061.65	2209.62	2388.67	2451.43	64.34	1.14
8935.00	91.90	88.90	6650.23	1062.89	2304.58	2481.59	2537.88	65.24	1.20
9030.00	90.80	88.80	6647.99	1064.80	2399.53	2574.65	2625.17	66.07	1.16
9125.00	92.30	88.60	6645.42	1066.95	2494.47	2667.75	2713.07	66.84	1.59
9221.00	92.90	89.40	6641.07	1068.63	2590.35	2761.67	2802.12	67.58	1.04
9316.00	90.40	90.10	6638.33	1069.04	2685.31	2854.40	2890.28	68.29	2.73
9411.00	89.70	89.10	6638.25	1069.70	2780.30	2947.22	2978.98	68.96	1.28
9506.00	89.60	89.30	6638.83	1071.03	2875.29	3040.19	3068.29	69.57	.24
9602.00	88.10	89.30	6640.76	1072.20	2971.26	3134.08	3158.80	70.16	1.56
9697.00	88.70	89.40	6643.41	1073.28	3066.22	3226.96	3248.63	70.71	.64
9792.00	90.00	88.80	6644.49	1074.77	3161.20	3319.96	3338.91	71.22	1.51
9887.00	88.50	91.30	6645.73	1074.69	3256.18	3412.61	3428.94	71.73	3.07
9983.00	89.90	91.70	6647.07	1072.18	3352.13	3505.67	3519.43	72.26	1.52

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
10078.00	91.40	92.00	6645.99	1069.11	3447.08	3597.63	3609.06	72.77	1.61
10173.00	90.60	91.50	6644.34	1066.21	3542.02	3689.62	3699.01	73.25	.99
10268.00	92.20	91.80	6642.01	1063.48	3636.94	3781.64	3789.24	73.70	1.71
10363.00	90.80	91.20	6639.53	1060.99	3731.88	3873.72	3879.77	74.13	1.60
10459.00	90.30	90.20	6638.61	1059.82	3827.86	3967.11	3971.87	74.52	1.16
10554.00	90.30	88.20	6638.11	1061.14	3922.85	4060.07	4063.84	74.86	2.11
10649.00	91.60	87.30	6636.53	1064.87	4017.76	4153.49	4156.48	75.16	1.66
10744.00	90.90	89.00	6634.46	1067.94	4112.68	4246.77	4249.08	75.44	1.93
10839.00	90.50	88.40	6633.30	1070.09	4207.65	4339.90	4341.59	75.73	.76
10934.00	90.70	87.80	6632.31	1073.24	4302.59	4433.22	4434.43	75.99	.67
11030.00	89.30	89.20	6632.31	1075.76	4398.55	4527.40	4528.19	76.26	2.06
11125.00	89.90	89.40	6632.97	1076.92	4493.54	4620.33	4620.79	76.52	.67
11220.00	91.40	89.20	6631.89	1078.08	4588.53	4713.26	4713.48	76.78	1.59
11315.00	89.60	90.00	6631.06	1078.74	4683.52	4806.08	4806.14	77.03	2.07
Last MWD Survey									
11380.00	90.20	90.10	6631.18	1078.68	4748.52	4869.48	4869.49	77.20	.94
Straight Line Projection to TD									
11447.00	90.20	90.10	6630.94	1078.57	4815.52	4934.82	4934.83	77.38	.00