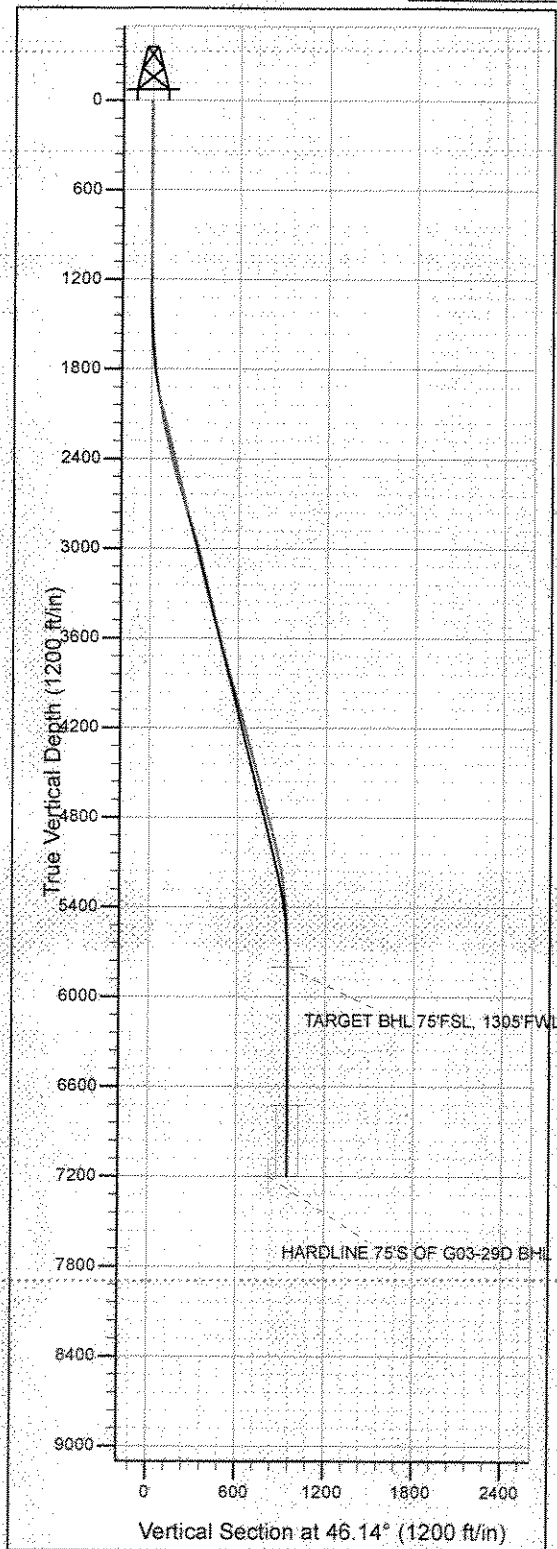


Well Name: **Romero G03-29D 03-16-09**
Surface Location: Romero Pad Sec.3-T4N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4670.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1370337.64 3235048.17 40° 20' 48.876 N 104° 39' 24.120 W
Original Well Elev WELL @ 4683.0ft (Original Well Elev)

Directional



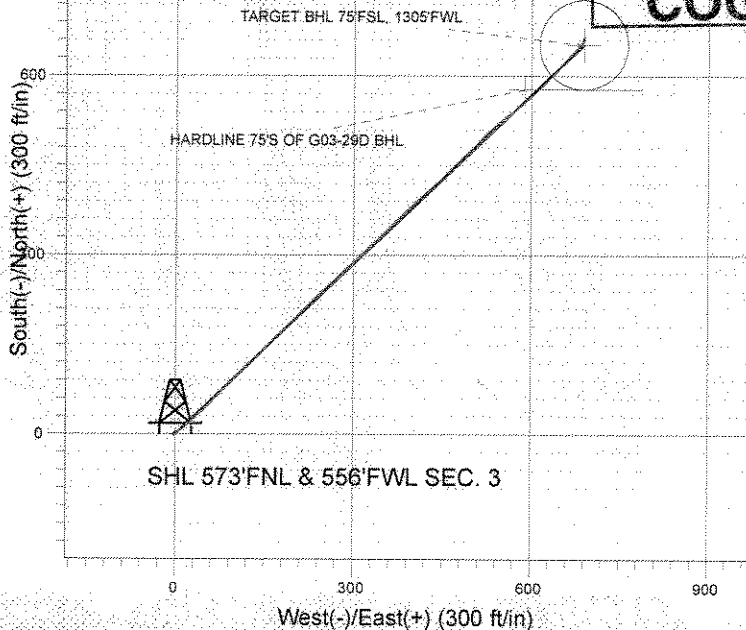
NOBLE ENERGY INC WELD COUNTY CO

RECEIVED

SEP 10 2010

COGCC

Projected BHL 664'N & 691'E of surface
86'FSL & 1307'FWL SEC. 34



LEGEND

- Romero G03-29D 03-16-09, Romero G03-29D, Romero G03-29D Plan #1 V0
- Romero G03-29D
- Survey #1

Final Survey Plot

Projected Final Survey -
7321'MD & 7203'TVD @ 958' VS
0.2 deg Inc 119.8 deg AZ

Project: SEC.3-T4N-R65W
Site: Romero Pad Sec.3-T4N-R65W
Well: Romero G03-29D 03-16-09
Plan: Romero G03-29D

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Romero G03-29D 03-16-09
Project:	SEC 3-T4N-R65W	TVD Reference:	WELL @ 4683.0ft (Original Well Elev)
Site:	Romero Pad Sec 3-T4N-R65W	MD Reference:	WELL @ 4683.0ft (Original Well Elev)
Well:	Romero G03-29D 03-16-09	North Reference:	True
Wellbore:	Romero G03-29D	Survey Calculation Method:	Minimum Curvature
Design:	Romero G03-29D	Database:	EDM den0-adp01 Server Data

Project	SEC 3-T4N-R65W		
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		Romero Pad Sec 3-T4N-R65W			
Site Position:		Northing:	1,370,337.64 ft	Latitude:	40° 20' 48.876 N
From:	Lat/Long	Easting:	3,235,048.17 ft	Longitude:	104° 39' 24.120 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.54 °

Well	Romero G03-29D 03-16-09					
Well Position	+N/-S	0.0 ft	Northing:	1,370,337.64 ft	Latitude:	40° 20' 48.876 N
	+E/-W	0.0 ft	Easting:	3,235,048.17 ft	Longitude:	104° 39' 24.120 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,670.0 ft	

Wellbore	Romero G03-29D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/16/2009	9.07	67.11	53,371
	IGRF200510	12/31/2009	8.96	67.08	53,289

Design	Romero G03-29D				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	46.14	

Survey Program		Date	5/8/2010	
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
639.0	7,321.0	Survey #1 (Romero G03-29D)	MWD	MWD - Standard

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
639.0	0.60	261.60	639.0	-0.5	-3.3	-2.7	0.09	0.09	0.00
682.0	0.20	337.70	682.0	-0.5	-3.6	-2.9	1.36	-0.93	176.98
767.0	0.30	51.40	767.0	-0.2	-3.4	-2.6	0.37	0.12	86.71
853.0	0.40	55.10	853.0	0.1	-3.0	-2.1	0.12	0.12	4.30
940.0	0.90	44.50	940.0	0.8	-2.3	-1.1	0.59	0.57	-12.18
1,026.0	0.90	22.10	1,026.0	1.9	-1.6	0.2	0.41	0.00	-26.05
1,111.0	1.00	52.10	1,111.0	3.0	-0.7	1.5	0.59	0.12	35.29
1,197.0	1.20	67.40	1,196.9	3.8	0.7	3.1	0.41	0.23	17.79
1,283.0	1.60	66.50	1,282.9	4.6	2.6	5.1	0.47	0.47	-1.05
1,369.0	1.90	76.20	1,368.9	5.4	5.1	7.4	0.49	0.35	11.28
1,454.0	2.30	57.20	1,453.8	6.7	7.9	10.3	0.94	0.47	-22.35

Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC 3-T4N-R65W
 Site: Romero Pad Sec 3-T4N-R65W
 Well: Romero G03-29D 03-16-09
 Wellbore: Romero G03-29D
 Design: Romero G03-29D

Local Co-ordinate Reference: Well Romero G03-29D 03-16-09
 TVD Reference: WELL @ 4683.0ft (Original Well Elev)
 MD Reference: WELL @ 4683.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM den0-adp01 Server Data

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)
1,540.0	3.00	55.40	1,539.7	8.9	11.2	14.3	0.82	0.81	-2.09
1,625.0	4.10	48.40	1,624.6	12.2	15.3	19.5	1.39	1.29	-8.24
1,711.0	5.20	46.80	1,710.3	16.9	20.5	26.5	1.29	1.28	-1.86
1,797.0	6.00	50.50	1,795.9	22.4	26.8	34.8	1.02	0.93	4.30
1,882.0	7.70	47.00	1,880.3	29.1	34.4	45.0	2.06	2.00	-4.12
1,968.0	8.70	44.20	1,965.4	37.7	43.1	57.2	1.25	1.16	-3.26
2,054.0	10.40	45.90	2,050.2	47.8	53.2	71.5	2.00	1.98	1.98
2,139.0	11.60	44.50	2,133.6	59.2	64.7	87.7	1.45	1.41	-1.65
2,225.0	12.70	47.30	2,217.7	71.8	77.7	105.8	1.45	1.28	3.26
2,311.0	13.60	44.60	2,301.4	85.4	91.8	125.4	1.27	1.05	-3.14
2,397.0	14.80	46.20	2,384.8	100.2	106.8	146.4	1.47	1.40	1.86
2,482.0	15.10	48.10	2,466.9	115.1	122.9	168.4	0.68	0.35	2.24
2,568.0	15.90	44.80	2,549.8	131.0	139.5	191.3	1.38	0.93	-3.84
2,654.0	17.20	44.00	2,632.2	148.5	156.7	215.8	1.53	1.51	-0.93
2,739.0	18.30	46.00	2,713.2	166.8	175.0	241.7	1.48	1.29	2.35
2,825.0	18.50	46.00	2,794.8	185.6	194.5	268.9	0.23	0.23	0.00
2,911.0	16.50	44.40	2,876.8	203.8	212.9	294.7	2.39	-2.33	-1.86
2,996.0	16.70	45.20	2,958.3	221.1	230.0	319.0	0.36	0.24	0.94
3,082.0	15.90	47.70	3,040.8	237.7	247.5	343.1	1.24	-0.93	2.91
3,167.0	13.40	48.50	3,123.0	252.1	263.5	364.6	2.95	-2.94	0.94
3,253.0	13.80	45.20	3,206.6	265.9	278.2	384.8	1.01	0.47	-3.84
3,338.0	14.50	46.80	3,289.1	280.3	293.1	405.6	0.94	0.82	1.88
3,424.0	13.60	48.20	3,372.5	294.4	308.5	426.5	1.12	-1.05	1.63
3,509.0	14.00	44.80	3,455.0	308.4	323.2	446.7	1.06	0.47	-4.00
3,595.0	13.90	48.20	3,538.5	322.7	338.3	467.5	0.96	-0.12	3.95
3,681.0	14.80	46.00	3,621.8	337.2	353.9	488.8	1.22	1.05	-2.56
3,766.0	15.80	43.50	3,703.8	353.1	369.6	511.2	1.41	1.18	-2.94
3,852.0	16.30	45.40	3,786.4	370.1	386.3	535.0	0.84	0.58	2.21
3,937.0	16.20	46.80	3,868.1	386.6	403.4	558.7	0.48	-0.12	1.65
4,023.0	16.30	48.50	3,950.6	402.8	421.2	582.8	0.57	0.12	1.98
4,109.0	15.40	48.90	4,033.3	418.3	438.9	606.3	1.05	-1.05	0.47
4,194.0	16.40	45.30	4,115.1	434.1	455.9	629.5	1.65	1.18	-4.24
4,280.0	16.10	45.30	4,197.7	451.1	473.0	653.6	0.35	-0.35	0.00
4,366.0	15.70	48.20	4,280.4	467.2	490.1	677.2	1.03	-0.47	3.37
4,451.0	16.00	44.30	4,362.1	483.3	506.9	700.4	1.30	0.35	-4.59
4,537.0	15.60	43.80	4,444.9	500.1	523.2	723.8	0.49	-0.47	-0.58
4,622.0	15.00	48.20	4,526.9	515.7	539.3	746.2	1.54	-0.71	5.18
4,708.0	13.90	52.80	4,610.2	529.3	555.8	767.5	1.85	-1.28	5.35
4,793.0	15.00	51.30	4,692.5	542.4	572.5	788.6	1.37	1.29	-1.76
4,879.0	15.10	47.40	4,775.5	556.9	589.5	810.9	1.18	0.12	-4.53
4,965.0	15.30	47.90	4,858.5	572.1	606.1	833.5	0.28	0.23	0.58
5,050.0	15.30	45.30	4,940.5	587.5	622.4	855.9	0.81	0.00	-3.06
5,136.0	13.50	44.10	5,023.8	602.7	637.5	877.3	2.12	-2.09	-1.40
5,222.0	11.80	42.80	5,107.7	616.4	650.4	896.1	2.00	-1.98	-1.51
5,307.0	9.50	43.20	5,191.2	627.9	661.2	911.8	2.71	-2.71	0.47
5,393.0	7.70	44.90	5,276.3	637.1	670.1	924.6	2.11	-2.09	1.98
5,478.0	6.10	43.20	5,360.7	644.5	677.2	934.8	1.90	-1.88	-2.00
5,564.0	4.90	41.70	5,446.3	650.5	682.8	943.0	1.41	-1.40	-1.74
5,650.0	3.40	36.70	5,532.0	655.3	686.7	949.2	1.79	-1.74	-5.81
5,735.0	1.90	25.70	5,616.9	658.6	688.8	953.0	1.86	-1.76	-12.94
5,821.0	0.70	3.10	5,702.9	660.4	689.5	954.8	1.49	-1.40	-26.28
5,907.0	0.70	16.30	5,788.9	661.4	689.7	955.6	0.19	0.00	15.35
5,918.0	0.66	15.69	5,799.9	661.6	689.7	955.7	0.33	-0.32	-5.50

TARGET BHL 75'FSL, 1305'FWL

ENSIGN Directional

ENSIGN DIRECTIONAL Survey Report



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Romero G03-29D 03-16-09
Project:	SEC 3-T4N-R65W	TVD Reference:	WELL @ 4683.0ft (Original Well Elev)
Site:	Romero Pad Sec.3-T4N-R65W	MD Reference:	WELL @ 4683.0ft (Original Well Elev)
Well:	Romero G03-29D 03-16-09	North Reference:	True
Wellbore:	Romero G03-29D	Survey Calculation Method:	Minimum Curvature
Design:	Romero G03-29D	Database:	EDM den0-adp01 Server Data

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)
6,035.0	0.30	0.50	5,916.9	662.5	689.9	956.5	0.33	-0.31	-12.99
6,163.0	0.30	353.40	6,044.9	663.2	689.9	956.9	0.03	0.00	-5.55
6,292.0	0.20	348.80	6,173.9	663.8	689.8	957.3	0.08	-0.08	-3.57
6,420.0	0.40	357.00	6,301.9	664.4	689.7	957.7	0.16	0.16	6.41
6,549.0	0.10	6.40	6,430.9	665.0	689.7	958.1	0.23	-0.23	7.29
6,677.0	0.10	35.20	6,558.9	665.2	689.8	958.3	0.04	0.00	22.50
6,805.0	0.10	285.20	6,686.9	665.3	689.7	958.3	0.13	0.00	-85.94
6,845.1	0.07	162.14	6,727.0	665.3	689.7	958.3	0.38	-0.07	-306.61
TARGET CIRCLE 75' FSL, 1305' FWL									
6,934.0	0.40	134.50	6,815.9	665.0	689.9	958.3	0.38	0.37	-31.10
7,062.0	0.20	168.30	6,943.9	664.5	690.3	958.2	0.20	-0.16	26.41
7,190.0	0.20	184.40	7,071.9	664.0	690.3	957.9	0.04	0.00	12.58
7241 * 7,271.0	0.20	119.80	7,152.9	663.8	690.4	957.8	0.26	0.00	-79.75
7,314.0	0.20	119.80	7,195.8	663.8	690.6	957.8	0.00	0.00	0.00
HARDLINE 75'S OF G03-29D BHL									
7,321.0	0.20	119.80	7,202.9	663.8	690.6	957.9	0.00	0.00	0.00

Wellbore Targets

Target Name

hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
TARGET BHL 75' FSL	0.00	0.00	5,800.0	652.7	689.0	1,370,996.84	3,235,730.92	40° 20' 55.326 N	104° 39' 15.221 W
- survey misses target center by 8.9ft at 5918.0ft MD (5799.9 TVD, 661.6 N, 689.7 E)									
- Point									
TARGET CIRCLE 75'	0.00	0.00	6,727.0	652.7	689.0	1,370,996.83	3,235,730.90	40° 20' 55.326 N	104° 39' 15.221 W
- survey misses target center by 12.6ft at 6845.1ft MD (6727.0 TVD, 665.3 N, 689.7 E)									
- Circle (radius 75.0)									
HARDLINE 75'S OF C	0.00	0.00	7,196.0	577.7	589.0	1,370,920.89	3,235,631.62	40° 20' 54.584 N	104° 39' 16.513 W
- survey misses target center by 133.1ft at 7314.0ft MD (7195.8 TVD, 663.8 N, 690.6 E)									
- Polygon									
Point 1			7,196.0	0.0	0.0	1,370,920.89	3,235,631.62		
Point 2			7,196.0	0.0	200.0	1,370,922.79	3,235,631.60		

Checked By: _____	Approved By: _____	Date: _____
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