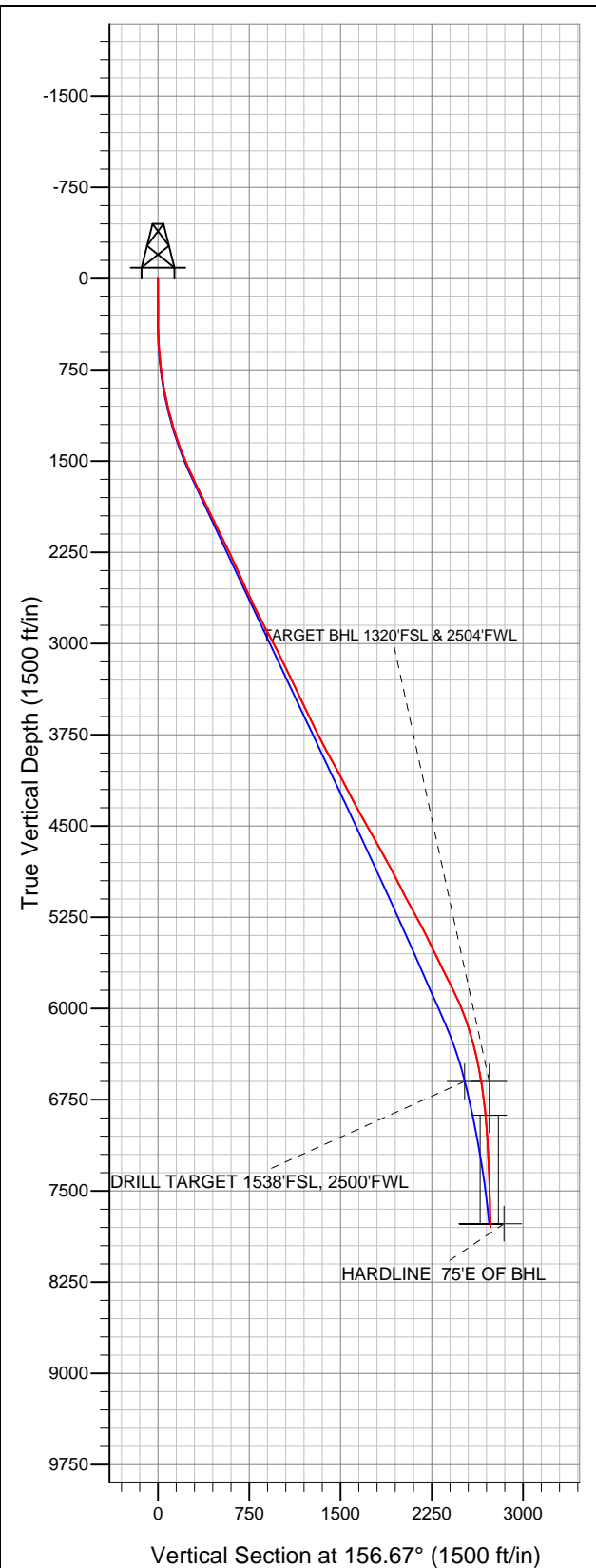




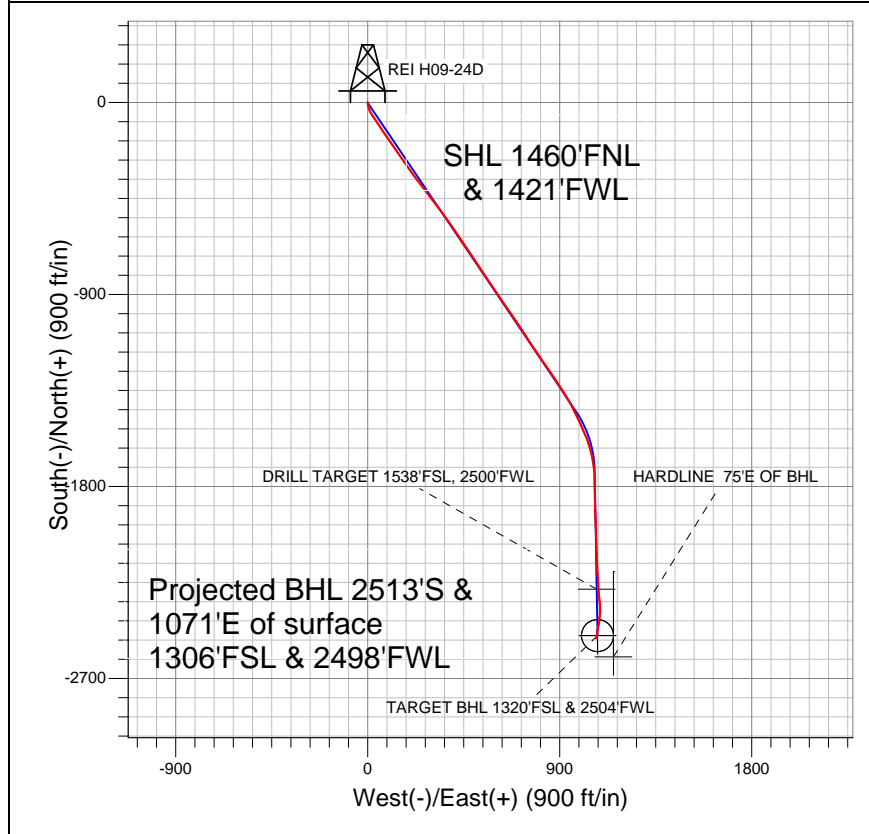
Well Name: REI H09-24D

Surface Location: REI H09-31D Pad Sec.9-T3N-R65W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4829.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1332487.87	3230960.99	40.243120	-104.672630	
Original Well Elev				WELL @ 4842.0ft (Original Well Elev)		



NOBLE ENERGY INC WELD COUNTY CO



- LEGEND
- Wellbore #1
 - REI H09-24D, Wellbore #1, Noble REI H09-24D Plan #2 (4-20-12) R V0
 - Survey #1

Final Survey Plot

Projected Final Survey -
8435'MD & 7801'TVD @ 2732'VS
1.30 deg Inc 187.00 deg AZ

Project: SEC.9-T3N-R65W
Site: REI H09-31D Pad Sec.9-T3N-R65W
Well: REI H09-24D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.9-T3N-R65W

REI H09-31D Pad Sec.9-T3N-R65W

REI H09-24D

Wellbore #1

Survey: Survey #1

Standard Survey Report

30 April, 2012



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well REI H09-24D
Project:	SEC.9-T3N-R65W	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site:	REI H09-31D Pad Sec.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Well:	REI H09-24D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.9-T3N-R65W, 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	REI H09-31D Pad Sec.9-T3N-R65W		
Site Position:		Northing:	1,332,502.33ft
From:	Lat/Long	Easting:	3,230,946.90ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.243160
		Longitude:	-104.672680
		Grid Convergence:	0.53 °

Well	REI H09-24D		
Well Position	+N/-S	0.0 ft	Northing: 1,332,487.87 ft
	+E/-W	0.0 ft	Easting: 3,230,960.99 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.243120
		Longitude:	-104.672630
		Ground Level:	4,829.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	4/20/2012	8.64	66.92	52,993

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 (°)	
	6,600.0	0.0	0.0	156.67	

Survey Program	Date	4/30/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
131.0	8,435.0	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	
131.0	0.20	118.70	131.0	-0.1	0.2	0.2	0.15	0.15	0.00	
222.0	0.30	140.50	222.0	-0.4	0.5	0.5	0.15	0.11	23.96	
310.0	0.20	236.80	310.0	-0.6	0.5	0.8	0.43	-0.11	109.43	
427.0	1.50	181.60	427.0	-2.3	0.3	2.2	1.19	1.11	-47.18	
554.0	3.40	172.70	553.9	-7.7	0.7	7.3	1.52	1.50	-7.01	
682.0	6.20	164.70	681.4	-18.1	3.0	17.8	2.24	2.19	-6.25	
768.0	7.40	162.80	766.8	-27.9	5.9	27.9	1.42	1.40	-2.21	
897.0	9.60	153.00	894.4	-45.4	13.2	46.9	2.04	1.71	-7.60	
1,025.0	12.80	146.10	1,019.9	-66.7	26.0	71.5	2.71	2.50	-5.39	
1,153.0	15.30	145.90	1,144.1	-92.4	43.4	102.1	1.95	1.95	-0.16	
1,282.0	18.60	145.90	1,267.5	-123.6	64.5	139.0	2.56	2.56	0.00	
1,410.0	20.90	146.60	1,387.9	-159.5	88.5	181.5	1.81	1.80	0.55	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well REI H09-24D
Project:	SEC.9-T3N-R65W	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site:	REI H09-31D Pad Sec.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Well:	REI H09-24D	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)
1,539.0	23.90	144.90	1,507.2	-200.1	116.2	229.8	2.38	2.33	-1.32
1,667.0	24.10	144.50	1,624.1	-242.6	146.3	280.7	0.20	0.16	-0.31
1,795.0	26.40	145.10	1,739.9	-287.3	177.7	334.1	1.81	1.80	0.47
1,924.0	26.70	144.50	1,855.3	-334.4	211.0	390.6	0.31	0.23	-0.47
2,052.0	27.30	142.10	1,969.3	-380.9	245.7	447.1	0.97	0.47	-1.88
2,181.0	26.50	142.10	2,084.4	-427.0	281.5	503.6	0.62	-0.62	0.00
2,309.0	27.10	143.10	2,198.6	-472.8	316.6	559.6	0.59	0.47	0.78
2,437.0	25.80	144.00	2,313.2	-518.7	350.5	615.1	1.06	-1.02	0.70
2,566.0	24.90	143.80	2,429.8	-563.3	383.0	668.9	0.70	-0.70	-0.16
2,694.0	23.90	145.90	2,546.4	-606.5	413.5	720.7	1.03	-0.78	1.64
2,823.0	26.50	146.50	2,663.1	-652.2	444.0	774.7	2.03	2.02	0.47
2,951.0	27.10	146.60	2,777.3	-700.3	475.8	831.5	0.47	0.47	0.08
3,079.0	28.60	146.80	2,890.5	-750.3	508.6	890.4	1.17	1.17	0.16
3,208.0	27.50	146.10	3,004.3	-800.9	542.2	950.1	0.89	-0.85	-0.54
3,336.0	28.40	145.40	3,117.4	-850.5	575.9	1,009.0	0.75	0.70	-0.55
3,465.0	25.90	145.40	3,232.2	-898.9	609.3	1,066.7	1.94	-1.94	0.00
3,593.0	24.40	145.80	3,348.1	-943.8	640.1	1,120.1	1.18	-1.17	0.31
3,721.0	27.00	145.80	3,463.4	-989.7	671.3	1,174.6	2.03	2.03	0.00
3,850.0	26.80	146.10	3,578.4	-1,038.1	704.0	1,232.0	0.19	-0.16	0.23
3,978.0	27.00	146.10	3,692.6	-1,086.1	736.3	1,288.9	0.16	0.16	0.00
4,107.0	26.50	146.50	3,807.8	-1,134.4	768.5	1,346.0	0.41	-0.39	0.31
4,235.0	29.00	147.20	3,921.0	-1,184.3	801.1	1,404.7	1.97	1.95	0.55
4,363.0	29.50	144.70	4,032.7	-1,236.1	836.1	1,466.2	1.03	0.39	-1.95
4,492.0	27.60	145.90	4,146.0	-1,286.8	871.2	1,526.6	1.54	-1.47	0.93
4,620.0	28.50	146.30	4,259.0	-1,336.8	904.8	1,585.8	0.72	0.70	0.31
4,749.0	28.50	149.30	4,372.4	-1,388.8	937.5	1,646.6	1.11	0.00	2.33
4,877.0	29.70	153.70	4,484.2	-1,443.5	967.2	1,708.5	1.92	0.94	3.44
5,005.0	30.10	155.10	4,595.2	-1,501.1	994.8	1,772.3	0.63	0.31	1.09
5,134.0	28.30	157.00	4,707.8	-1,558.6	1,020.3	1,835.2	1.57	-1.40	1.47
5,262.0	29.00	163.50	4,820.1	-1,616.3	1,041.0	1,896.4	2.49	0.55	5.08
5,391.0	27.60	169.50	4,933.7	-1,675.6	1,055.3	1,956.6	2.46	-1.09	4.65
5,519.0	28.90	175.80	5,046.5	-1,735.7	1,063.0	2,014.7	2.54	1.02	4.92
5,647.0	30.20	180.70	5,157.9	-1,798.7	1,064.9	2,073.4	2.14	1.02	3.83
5,776.0	30.80	178.60	5,269.0	-1,864.2	1,065.3	2,133.6	0.95	0.47	-1.63
5,904.0	29.00	177.80	5,380.0	-1,927.9	1,067.3	2,193.0	1.44	-1.41	-0.63
6,033.0	27.70	178.50	5,493.5	-1,989.2	1,069.3	2,250.0	1.04	-1.01	0.54
6,161.0	27.50	177.90	5,607.0	-2,048.4	1,071.1	2,305.1	0.27	-0.16	-0.47
6,289.0	28.50	178.10	5,720.0	-2,108.5	1,073.2	2,361.1	0.78	0.78	0.16
6,418.0	27.70	177.20	5,833.8	-2,169.2	1,075.7	2,417.8	0.70	-0.62	-0.70
6,546.0	25.10	175.80	5,948.4	-2,226.0	1,079.1	2,471.4	2.09	-2.03	-1.09
6,675.0	20.90	176.90	6,067.1	-2,276.3	1,082.4	2,518.8	3.27	-3.26	0.85
6,803.0	18.60	175.10	6,187.6	-2,319.4	1,085.4	2,559.6	1.86	-1.80	-1.41
6,931.0	16.10	174.60	6,309.8	-2,357.4	1,088.8	2,595.9	1.96	-1.95	-0.39
7,060.0	13.10	182.70	6,434.6	-2,389.9	1,089.8	2,626.0	2.81	-2.33	6.28
7,188.0	10.40	187.10	6,559.9	-2,415.8	1,087.7	2,649.0	2.22	-2.11	3.44
7,204.4	10.22	187.31	6,576.1	-2,418.7	1,087.3	2,651.6	1.11	-1.09	1.30
DRILL TARGET 1538'FSL, 2500'FWL									
7,241.6	9.82	187.82	6,612.7	-2,425.2	1,086.4	2,657.1	1.11	-1.09	1.37
TARGET BHL 1320'FSL & 2504'FWL									
7,317.0	9.00	189.00	6,687.1	-2,437.3	1,084.7	2,667.6	1.11	-1.08	1.56
7,445.0	7.70	190.40	6,813.7	-2,455.7	1,081.5	2,683.2	1.03	-1.02	1.09
7,514.1	7.00	189.96	6,882.3	-2,464.4	1,080.0	2,690.6	1.02	-1.02	-0.64
TARGET CIRCLE 1320'FSL & 2504'FWL									
7,573.0	6.40	189.50	6,940.7	-2,471.1	1,078.8	2,696.3	1.02	-1.02	-0.77

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well REI H09-24D
Project:	SEC.9-T3N-R65W	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site:	REI H09-31D Pad Sec.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Well:	REI H09-24D	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)
7,702.0	4.70	192.00	7,069.1	-2,483.4	1,076.5	2,706.7	1.33	-1.32	1.94
7,830.0	3.40	186.90	7,196.8	-2,492.3	1,075.0	2,714.2	1.05	-1.02	-3.98
7,959.0	2.50	185.00	7,325.6	-2,498.9	1,074.3	2,720.0	0.70	-0.70	-1.47
8,087.0	1.70	190.10	7,453.5	-2,503.6	1,073.7	2,724.1	0.64	-0.63	3.98
8,215.0	1.70	198.80	7,581.5	-2,507.2	1,072.8	2,727.1	0.20	0.00	6.80
8,344.0	1.50	192.20	7,710.4	-2,510.7	1,071.8	2,729.9	0.21	-0.16	-5.12
8,388.0	1.30	187.10	7,754.4	-2,511.7	1,071.6	2,730.8	0.54	-0.45	-11.59
HARDLINE 75°E OF BHL									
8,435.0	1.30	187.00	7,801.4	-2,512.8	1,071.5	2,731.7	0.00	0.00	-0.21

Checked By: _____	Approved By: _____	Date: _____
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