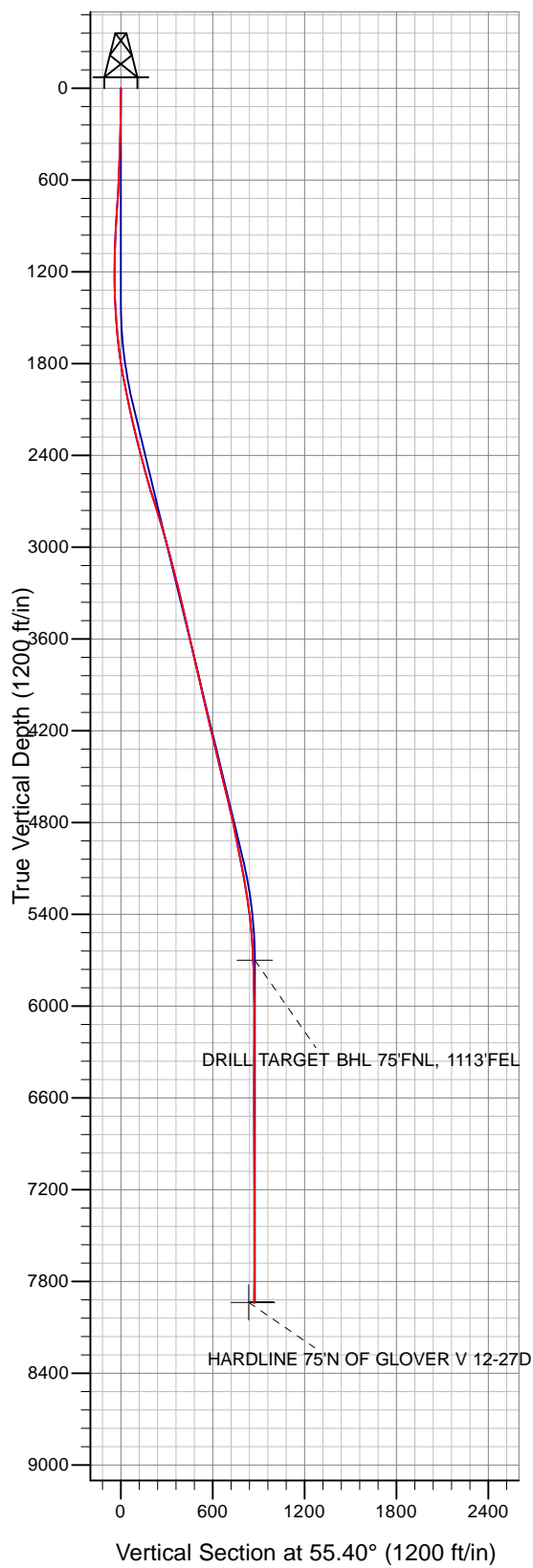
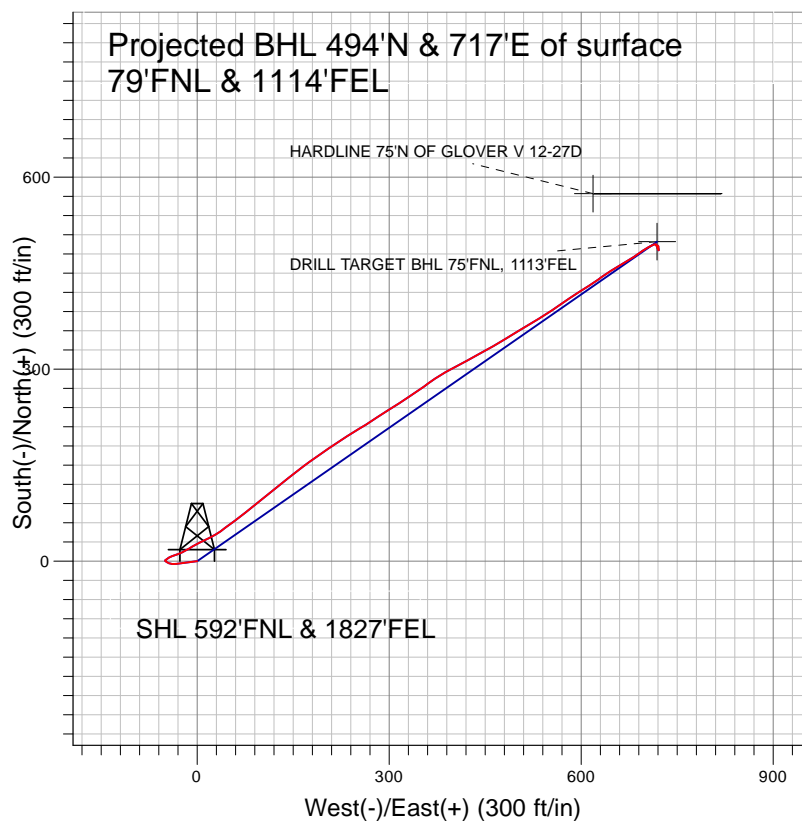


Surface Location: Glover Pad Sec.12-T2N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4836.0




+N/-S+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1301045.96	3185522.57	40° 9' 28.296 N 104° 50' 10.464 W	
		Original Well Elev	WELL @ 4849.0ft	(Original Well Elev)	



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

-  Glover V 12-27D, Glover V 12-27D, Glover V 12-27D V0
-  Glover V 12-27D
-  Survey #1

Final Survey Plot

Projected Final Survey -
8045'MD & 7941'TVD @ 871' VS
1.3 deg Inc 304.6 deg AZ

Project: SEC.12-T2N-R67W
Site: Glover Pad Sec.12-T2N-R67W
Well: Glover V 12-27D
Plan: Glover V 12-27D



NOBLE ENERGY INC WELD COUNTY CO

SEC.12-T2N-R67W

Glover Pad Sec.12-T2N-R67W

Glover V 12-27D

Glover V 12-27D

Survey: Survey #1

Standard Survey Report

30 October, 2009



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Glover V 12-27D
Project:	SEC.12-T2N-R67W	TVD Reference:	WELL @ 4849.0ft (Original Well Elev)
Site:	Glover Pad Sec.12-T2N-R67W	MD Reference:	WELL @ 4849.0ft (Original Well Elev)
Well:	Glover V 12-27D	North Reference:	True
Wellbore:	Glover V 12-27D	Survey Calculation Method:	Minimum Curvature
Design:	Glover V 12-27D	Database:	EDM den0-adp01 Server Data

Project	SEC.12-T2N-R67W, 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	Glover Pad Sec.12-T2N-R67W		
Site Position:		Northing:	1,301,045.97 ft
From:	Lat/Long	Easting:	3,185,522.57 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 9' 28.296 N
		Longitude:	104° 50' 10.464 W
		Grid Convergence:	0.43 °

Well	Glover V 12-27D		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 9' 28.296 N
		Longitude:	104° 50' 10.464 W
		Ground Level:	4,836.0 ft

Wellbore	Glover V 12-27D		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF200510	10/22/2008	9.20
	IGRF200510	10/1/2009	9.07
			Dip Angle (°)
			66.94
			66.91
			Field Strength (nT)
			53,292
			53,195

Design	Glover V 12-27D		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	0.0	0.0	0.0
			Direction (°)
			55.40

Survey Program	Date	10/30/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
858.0	8,045.0	Survey #1 (Glover V 12-27D)	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
858.0	4.40	262.70	857.2	-4.2	-32.7	-29.3	0.51	0.51	0.00
944.0	4.20	273.90	942.9	-4.4	-39.1	-34.7	1.00	-0.23	13.02
1,029.0	3.30	294.50	1,027.7	-3.2	-44.4	-38.3	1.89	-1.06	24.24
1,115.0	2.30	301.90	1,113.6	-1.2	-48.1	-40.3	1.23	-1.16	8.60
1,201.0	1.10	316.70	1,199.6	0.3	-50.2	-41.1	1.47	-1.40	17.21
1,286.0	0.80	55.50	1,284.6	1.2	-50.2	-40.7	1.71	-0.35	116.24
1,372.0	2.60	51.70	1,370.5	2.8	-48.2	-38.1	2.10	2.09	-4.42
1,458.0	3.50	58.90	1,456.4	5.3	-44.4	-33.5	1.14	1.05	8.37
1,543.0	4.40	67.20	1,541.2	7.9	-39.2	-27.8	1.25	1.06	9.76
1,629.0	5.10	73.40	1,626.9	10.3	-32.5	-20.9	1.01	0.81	7.21
1,715.0	7.40	64.80	1,712.4	13.8	-23.8	-11.8	2.88	2.67	-10.00

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Glover V 12-27D
Project:	SEC.12-T2N-R67W	TVD Reference:	WELL @ 4849.0ft (Original Well Elev)
Site:	Glover Pad Sec.12-T2N-R67W	MD Reference:	WELL @ 4849.0ft (Original Well Elev)
Well:	Glover V 12-27D	North Reference:	True
Wellbore:	Glover V 12-27D	Survey Calculation Method:	Minimum Curvature
Design:	Glover V 12-27D	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)
1,800.0	9.10	58.90	1,796.5	19.6	-13.1	0.3	2.23	2.00	-6.94
1,886.0	10.20	61.30	1,881.3	26.7	-0.6	14.7	1.36	1.28	2.79
1,972.0	11.30	65.80	1,965.8	33.8	13.8	30.5	1.61	1.28	5.23
2,057.0	11.80	59.00	2,049.1	41.7	28.8	47.4	1.71	0.59	-8.00
2,143.0	12.20	52.50	2,133.2	51.8	43.6	65.3	1.64	0.47	-7.56
2,229.0	13.60	53.10	2,217.0	63.4	58.9	84.4	1.64	1.63	0.70
2,314.0	14.70	52.20	2,299.5	76.0	75.4	105.2	1.32	1.29	-1.06
2,400.0	14.40	50.20	2,382.7	89.5	92.2	126.7	0.68	-0.35	-2.33
2,486.0	14.70	51.40	2,465.9	103.2	108.9	148.3	0.49	0.35	1.40
2,571.0	15.50	50.80	2,548.0	117.1	126.2	170.4	0.96	0.94	-0.71
2,657.0	17.20	52.70	2,630.5	132.1	145.2	194.5	2.07	1.98	2.21
2,743.0	17.80	52.00	2,712.5	147.9	165.7	220.3	0.74	0.70	-0.81
2,829.0	17.40	55.90	2,794.5	163.2	186.7	246.3	1.45	-0.47	4.53
2,914.0	16.00	54.70	2,875.9	177.1	206.8	270.7	1.70	-1.65	-1.41
3,000.0	15.60	57.10	2,958.7	190.2	226.1	294.2	0.89	-0.47	2.79
3,085.0	14.80	59.60	3,040.7	201.9	245.1	316.4	1.22	-0.94	2.94
3,171.0	14.50	56.90	3,123.9	213.3	263.6	338.1	0.87	-0.35	-3.14
3,257.0	14.10	56.10	3,207.3	225.1	281.3	359.4	0.52	-0.47	-0.93
3,342.0	13.80	59.00	3,289.7	236.1	298.6	379.8	0.89	-0.35	3.41
3,428.0	13.00	57.20	3,373.4	246.6	315.5	399.7	1.05	-0.93	-2.09
3,514.0	12.60	55.00	3,457.3	257.2	331.3	418.8	0.73	-0.47	-2.56
3,599.0	12.70	56.40	3,540.2	267.7	346.7	437.4	0.38	0.12	1.65
3,685.0	13.60	54.00	3,624.0	278.9	362.8	457.0	1.22	1.05	-2.79
3,770.0	13.10	57.50	3,706.7	289.9	379.0	476.6	1.12	-0.59	4.12
3,856.0	12.70	61.00	3,790.5	299.7	395.5	495.7	1.02	-0.47	4.07
3,942.0	12.40	63.30	3,874.4	308.5	412.0	514.3	0.68	-0.35	2.67
4,027.0	12.60	62.00	3,957.4	316.9	428.3	532.5	0.41	0.24	-1.53
4,113.0	13.50	60.40	4,041.2	326.3	445.3	551.8	1.13	1.05	-1.86
4,198.0	13.60	60.20	4,123.8	336.1	462.6	571.7	0.13	0.12	-0.24
4,284.0	13.40	59.30	4,207.5	346.3	480.0	591.7	0.34	-0.23	-1.05
4,370.0	13.70	58.30	4,291.1	356.7	497.2	611.8	0.44	0.35	-1.16
4,455.0	13.50	58.30	4,373.7	367.2	514.2	631.8	0.24	-0.24	0.00
4,541.0	13.20	60.40	4,457.4	377.3	531.3	651.6	0.66	-0.35	2.44
4,626.0	13.50	55.20	4,540.1	387.8	547.9	671.2	1.46	0.35	-6.12
4,712.0	14.10	56.20	4,623.6	399.3	564.8	691.7	0.75	0.70	1.16
4,798.0	13.00	56.00	4,707.2	410.6	581.5	711.8	1.28	-1.28	-0.23
4,883.0	12.10	57.80	4,790.1	420.7	597.0	730.3	1.15	-1.06	2.12
4,969.0	11.30	57.30	4,874.4	430.0	611.7	747.7	0.94	-0.93	-0.58
5,055.0	11.50	53.90	4,958.7	439.6	625.7	764.7	0.82	0.23	-3.95
5,140.0	11.30	57.10	5,042.0	449.1	639.6	781.5	0.78	-0.24	3.76
5,226.0	10.10	57.80	5,126.5	457.7	653.0	797.5	1.40	-1.40	0.81
5,312.0	9.10	59.90	5,211.3	465.2	665.3	811.8	1.23	-1.16	2.44
5,397.0	9.10	58.70	5,295.2	472.0	676.9	825.2	0.22	0.00	-1.41
5,483.0	7.90	53.50	5,380.3	479.1	687.4	837.9	1.66	-1.40	-6.05
5,569.0	5.60	57.00	5,465.7	484.9	695.7	848.0	2.72	-2.67	4.07
5,654.0	4.40	60.60	5,550.3	488.7	702.0	855.4	1.46	-1.41	4.24
5,740.0	3.00	60.00	5,636.2	491.5	706.8	860.9	1.63	-1.63	-0.70
5,804.4	2.39	63.48	5,700.5	492.9	709.5	863.9	0.98	-0.94	5.41
DRILL TARGET BHL 75'FNL, 1113'FEL									
5,825.0	2.20	65.00	5,721.1	493.3	710.2	864.7	0.98	-0.93	7.37
5,911.0	1.80	69.50	5,807.0	494.5	713.0	867.7	0.50	-0.47	5.23
5,997.0	0.90	87.50	5,893.0	495.0	714.9	869.6	1.14	-1.05	20.93
6,082.0	0.60	77.10	5,978.0	495.1	716.0	870.5	0.39	-0.35	-12.24
6,211.0	0.40	167.00	6,107.0	494.8	716.8	871.0	0.56	-0.16	69.69

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Glover V 12-27D
Project:	SEC.12-T2N-R67W	TVD Reference:	WELL @ 4849.0ft (Original Well Elev)
Site:	Glover Pad Sec.12-T2N-R67W	MD Reference:	WELL @ 4849.0ft (Original Well Elev)
Well:	Glover V 12-27D	North Reference:	True
Wellbore:	Glover V 12-27D	Survey Calculation Method:	Minimum Curvature
Design:	Glover V 12-27D	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)
6,339.0	1.60	159.30	6,235.0	492.7	717.5	870.4	0.94	0.94	-6.02
6,468.0	1.80	157.90	6,363.9	489.1	718.9	869.5	0.16	0.16	-1.09
6,596.0	0.90	149.00	6,491.9	486.4	720.2	869.0	0.72	-0.70	-6.95
6,724.0	0.30	46.70	6,619.9	485.8	721.0	869.3	0.79	-0.47	-79.92
6,853.0	0.80	340.00	6,748.9	486.9	720.9	869.9	0.57	0.39	-51.71
6,981.0	0.40	16.50	6,876.9	488.1	720.7	870.4	0.42	-0.31	28.52
7,109.0	0.60	316.50	7,004.9	489.0	720.4	870.7	0.41	0.16	-46.88
7,238.0	0.50	38.20	7,133.8	490.0	720.3	871.1	0.56	-0.08	63.33
7,366.0	0.40	342.60	7,261.8	490.8	720.5	871.8	0.34	-0.08	-43.44
7,494.0	0.40	352.70	7,389.8	491.7	720.3	872.1	0.06	0.00	7.89
7,623.0	0.10	5.50	7,518.8	492.3	720.3	872.4	0.24	-0.23	9.92
7,751.0	0.10	291.80	7,646.8	492.4	720.2	872.4	0.09	0.00	-57.58
7,880.0	0.70	294.70	7,775.8	492.8	719.3	871.9	0.47	0.47	2.25
7,997.0	1.30	304.60	7,892.8	493.8	717.6	871.1	0.53	0.51	8.46
8,044.1	1.30	304.60	7,939.9	494.4	716.7	870.7	0.00	0.00	0.00
HARDLINE 75°N OF GLOVER V 12-27D									
8,045.0	1.30	304.60	7,940.8	494.5	716.7	870.7	0.00	0.00	0.00

Wellbore 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									
DRILL TARGET BHL	0.00	0.00	5,700.0	499.1	718.3	1,301,550.41	3,186,237.13	40° 9' 33.228 N	104° 50' 1.212 W
- survey misses target center by 10.8ft at 5804.4ft MD (5700.5 TVD, 492.9 N, 709.5 E)									
- Point									
HARDLINE 75°N OF C	0.00	0.00	7,937.0	574.1	618.3	1,301,624.65	3,186,136.53	40° 9' 33.969 N	104° 50' 2.501 W
- survey misses target center by 126.7ft at 8044.1ft MD (7939.9 TVD, 494.4 N, 716.7 E)									
- Polygon									
Point 1			7,937.0	0.0	0.0	1,301,624.65	3,186,136.53		
Point 2			7,937.0	0.0	200.0	1,301,626.14	3,186,336.52		

Checked By: _____	Approved By: _____	Date: _____
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