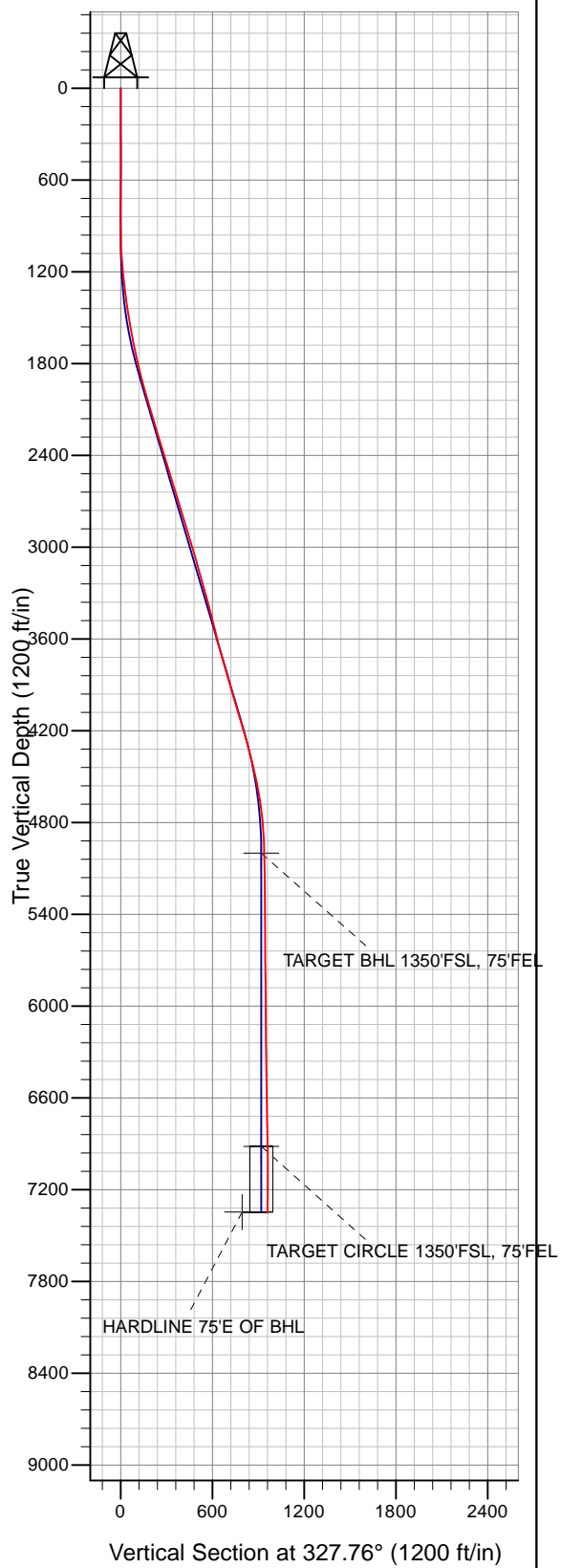
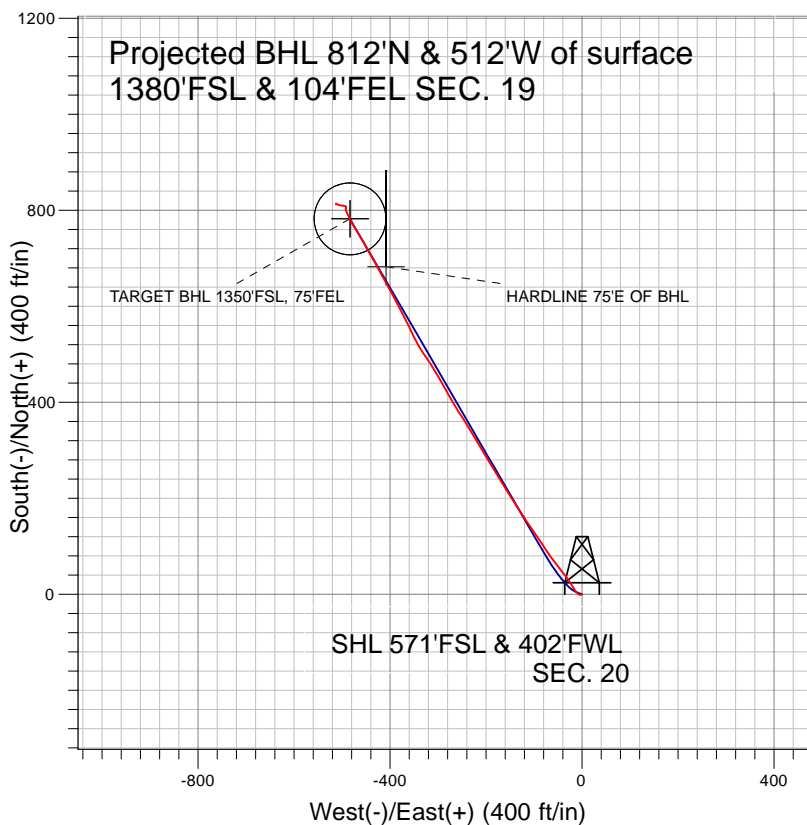


N+/S+/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1318332.65	3161487.63	40° 12' 20.790 N	104° 55' 18.574 W
		Original Well Elev	WELL @ 4876.0ft (Original Well Elev)		



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Salazar P20-33D, Wellbore #1, Noble Salazar P20-33D Plan #2 (6-8-10) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7473'MD & 7351'TVD @ 960' VS
0.4 deg Inc 135.1 deg AZ

Project: SEC.20-T3N-R67W
Site: Salazar P20-32D Pad Sec.20-T3N-R67W
Well: Salazar P20-33D
Plan: Wellbore #1



NOBLE ENERGY INC WELD COUNTY CO

SEC.20-T3N-R67W

Salazar P20-32D Pad Sec.20-T3N-R67W

Salazar P20-33D

Wellbore #1

Design: Wellbore #1

Standard Survey Report

01 July, 2010



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Salazar P20-33D
Project:	SEC.20-T3N-R67W	TVD Reference:	WELL @ 4876.0ft (Original Well Elev)
Site:	Salazar P20-32D Pad Sec.20-T3N-R67W	MD Reference:	WELL @ 4876.0ft (Original Well Elev)
Well:	Salazar P20-33D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

Project	SEC.20-T3N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Salazar P20-32D Pad Sec.20-T3N-R67W		
Site Position:		Northing:	1,318,357.43ft
From:	Lat/Long	Easting:	3,161,487.75ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 12' 21.035 N
		Longitude:	104° 55' 18.570 W
		Grid Convergence:	0.37 °

Well	Salazar P20-33D		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/8/2010	9.07	66.90	53,119

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 (°)	
	0.0	0.0	0.0	327.76	

Survey Program	Date	7/1/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
903.0	7,473.0	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	
903.0	0.50	252.70	903.0	-1.2	-3.8	1.0	0.06	0.06	0.00	
989.0	1.20	280.10	989.0	-1.1	-5.0	1.7	0.92	0.81	31.86	
1,074.0	2.90	310.80	1,073.9	0.4	-7.5	4.4	2.31	2.00	36.12	
1,160.0	4.90	317.70	1,159.7	4.6	-11.6	10.1	2.38	2.33	8.02	
1,246.0	6.70	327.10	1,245.3	11.5	-16.8	18.7	2.36	2.09	10.93	
1,332.0	7.30	327.90	1,330.6	20.3	-22.5	29.2	0.71	0.70	0.93	
1,417.0	8.00	327.10	1,414.9	29.9	-28.5	40.5	0.83	0.82	-0.94	
1,503.0	9.20	320.50	1,499.9	40.2	-36.2	53.3	1.80	1.40	-7.67	
1,589.0	10.50	322.70	1,584.6	51.8	-45.3	67.9	1.57	1.51	2.56	
1,674.0	11.10	323.00	1,668.1	64.5	-54.9	83.8	0.71	0.71	0.35	
1,760.0	12.40	323.50	1,752.3	78.5	-65.4	101.3	1.52	1.51	0.58	
1,846.0	13.40	326.40	1,836.2	94.2	-76.4	120.4	1.38	1.16	3.37	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Salazar P20-33D
Project:	SEC.20-T3N-R67W	TVD Reference:	WELL @ 4876.0ft (Original Well Elev)
Site:	Salazar P20-32D Pad Sec.20-T3N-R67W	MD Reference:	WELL @ 4876.0ft (Original Well Elev)
Well:	Salazar P20-33D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)	
1,931.0	15.30	326.10	1,918.5	111.7	-88.1	141.5	2.24	2.24	-0.35	
2,017.0	16.70	325.80	2,001.2	131.4	-101.4	165.2	1.63	1.63	-0.35	
2,103.0	16.00	326.20	2,083.7	151.4	-114.9	189.4	0.82	-0.81	0.47	
2,188.0	16.20	327.10	2,165.4	171.1	-127.9	212.9	0.38	0.24	1.06	
2,274.0	17.20	327.30	2,247.7	191.9	-141.2	237.7	1.16	1.16	0.23	
2,360.0	16.50	327.30	2,330.0	212.9	-154.7	262.6	0.81	-0.81	0.00	
2,445.0	17.30	328.10	2,411.4	233.8	-167.9	287.3	0.98	0.94	0.94	
2,531.0	17.40	328.80	2,493.5	255.6	-181.3	312.9	0.27	0.12	0.81	
2,616.0	17.40	329.90	2,574.6	277.5	-194.3	338.3	0.39	0.00	1.29	
2,702.0	17.20	329.10	2,656.7	299.5	-207.3	363.9	0.36	-0.23	-0.93	
2,788.0	16.50	328.80	2,739.0	320.9	-220.1	388.8	0.82	-0.81	-0.35	
2,874.0	17.10	328.50	2,821.3	342.1	-233.1	413.7	0.70	0.70	-0.35	
2,959.0	17.20	328.60	2,902.5	363.5	-246.1	438.7	0.12	0.12	0.12	
3,045.0	16.50	327.50	2,984.8	384.6	-259.3	463.7	0.89	-0.81	-1.28	
3,131.0	16.50	329.30	3,067.3	405.4	-272.1	488.1	0.59	0.00	2.09	
3,216.0	15.70	330.10	3,149.0	425.8	-284.0	511.7	0.98	-0.94	0.94	
3,302.0	15.30	330.80	3,231.8	445.8	-295.4	534.6	0.51	-0.47	0.81	
3,388.0	14.60	331.20	3,314.9	465.2	-306.1	556.8	0.82	-0.81	0.47	
3,473.0	14.40	324.20	3,397.2	483.1	-317.5	578.0	2.07	-0.24	-8.24	
3,559.0	14.90	326.40	3,480.4	501.0	-329.8	599.7	0.87	0.58	2.56	
3,644.0	13.90	329.90	3,562.8	519.0	-341.0	620.9	1.56	-1.18	4.12	
3,730.0	14.80	334.20	3,646.1	537.8	-351.0	642.1	1.62	1.05	5.00	
3,816.0	16.00	334.80	3,729.0	558.4	-360.8	664.8	1.41	1.40	0.70	
3,901.0	16.10	331.80	3,810.7	579.4	-371.3	688.2	0.98	0.12	-3.53	
3,987.0	16.70	333.20	3,893.2	600.9	-382.5	712.4	0.84	0.70	1.63	
4,072.0	16.20	331.80	3,974.7	622.3	-393.7	736.3	0.75	-0.59	-1.65	
4,158.0	15.90	331.30	4,057.3	643.2	-405.0	760.1	0.38	-0.35	-0.58	
4,244.0	16.50	330.70	4,139.9	664.2	-416.6	784.0	0.72	0.70	-0.70	
4,329.0	16.70	330.80	4,221.4	685.4	-428.5	808.3	0.24	0.24	0.12	
4,415.0	16.10	331.00	4,303.9	706.6	-440.3	832.5	0.70	-0.70	0.23	
4,501.0	14.40	331.10	4,386.9	726.4	-451.2	855.1	1.98	-1.98	0.12	
4,586.0	12.60	329.50	4,469.5	743.6	-461.1	874.9	2.16	-2.12	-1.88	
4,672.0	11.20	327.40	4,553.7	758.7	-470.3	892.6	1.70	-1.63	-2.44	
4,757.0	9.10	329.20	4,637.3	771.5	-478.2	907.6	2.50	-2.47	2.12	
4,843.0	7.30	333.80	4,722.4	782.2	-484.1	919.9	2.23	-2.09	5.35	
4,929.0	5.00	337.90	4,807.9	790.6	-487.9	929.0	2.72	-2.67	4.77	
5,014.0	3.00	333.50	4,892.7	796.0	-490.3	934.8	2.38	-2.35	-5.18	
5,100.0	1.60	341.60	4,978.7	799.2	-491.7	938.2	1.67	-1.63	9.42	
5,120.9	1.49	344.82	4,999.5	799.7	-491.9	938.8	0.66	-0.52	15.41	
TARGET BHL 1350'FSL, 75'FEL										
5,185.0	1.20	358.10	5,063.6	801.2	-492.1	940.2	0.66	-0.46	20.72	
5,228.0	0.70	20.80	5,106.6	801.9	-492.0	940.7	1.43	-1.16	52.79	
5,314.0	0.70	10.80	5,192.6	802.9	-491.7	941.4	0.14	0.00	-11.63	
5,443.0	0.70	8.50	5,321.6	804.4	-491.5	942.6	0.02	0.00	-1.78	
5,571.0	0.70	356.20	5,449.6	806.0	-491.4	943.9	0.12	0.00	-9.61	
5,699.0	0.40	335.70	5,577.6	807.2	-491.6	945.0	0.28	-0.23	-16.02	
5,828.0	0.30	306.80	5,706.6	807.8	-492.1	945.8	0.15	-0.08	-22.40	
5,956.0	0.50	306.50	5,834.6	808.3	-492.8	946.6	0.16	0.16	-0.23	
6,085.0	0.70	277.00	5,963.6	808.7	-494.1	947.6	0.28	0.16	-22.87	
6,213.0	0.60	305.30	6,091.6	809.2	-495.4	948.7	0.26	-0.08	22.11	
6,342.0	0.90	263.70	6,220.6	809.5	-496.9	949.8	0.47	0.23	-32.25	
6,470.0	1.30	274.20	6,348.5	809.5	-499.4	951.1	0.35	0.31	8.20	
6,598.0	1.50	280.70	6,476.5	809.9	-502.5	953.1	0.20	0.16	5.08	
6,727.0	1.20	286.40	6,605.5	810.6	-505.4	955.3	0.25	-0.23	4.42	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Salazar P20-33D
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Site:	Salazar P20-32D Pad Sec.20-T3N-R67W	MD Reference:	WELL @ 4876.0ft (Original Well Elev)
Well:	Salazar P20-33D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)	
6,855.0	1.30	292.60	6,733.4	811.5	-508.1	957.5	0.13	0.08	4.84	
6,984.0	1.20	300.70	6,862.4	812.8	-510.6	959.9	0.16	-0.08	6.28	
7,037.0	0.95	301.07	6,915.4	813.3	-511.4	960.7	0.47	-0.47	0.69	
TARGET CIRCLE 1350'FSL, 75'FEL										
7,112.0	0.60	302.10	6,990.4	813.8	-512.3	961.7	0.47	-0.47	1.38	
7,240.0	0.50	173.20	7,118.4	813.6	-512.8	961.8	0.78	-0.08	-100.70	
7,369.0	0.40	157.50	7,247.4	812.7	-512.6	960.8	0.12	-0.08	-12.17	
7,428.0	0.40	135.10	7,306.4	812.3	-512.3	960.4	0.26	0.00	-37.97	
7,468.8	0.40	135.10	7,347.2	812.1	-512.1	960.1	0.00	0.00	0.00	
HARDLINE 75'E OF BHL										
7,473.0	0.40	135.10	7,351.4	812.1	-512.1	960.1	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										
TARGET BHL 1350'F	0.00	0.00	5,000.0	782.1	-483.2	1,319,111.59	3,160,999.31	40° 12' 28.519 N		104° 55' 24.802 W
- actual wellpath misses target center by 19.6ft at 5120.8ft MD (4999.5 TVD, 799.7 N, -491.9 E)										
- Point										
TARGET CIRCLE 1350'FSL, 75'FEL	0.00	0.00	6,916.0	782.1	-483.2	1,319,111.55	3,160,999.36	40° 12' 28.519 N		104° 55' 24.801 W
- actual wellpath misses target center by 42.1ft at 7036.8ft MD (6915.2 TVD, 813.3 N, -511.4 E)										
- Circle (radius 75.0)										
HARDLINE 75'E OF E	0.00	0.00	7,346.0	682.1	-408.2	1,319,012.05	3,161,075.01	40° 12' 27.530 N		104° 55' 23.835 W
- actual wellpath misses target center by 166.5ft at 7468.8ft MD (7347.2 TVD, 812.1 N, -512.1 E)										
- Polygon										
Point 1			7,346.0	0.0	0.0	1,319,012.05	3,161,075.01			
Point 2			7,346.0	200.0	0.0	1,319,212.03	3,161,073.71			

Checked By: _____	Approved By: _____	Date: _____
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