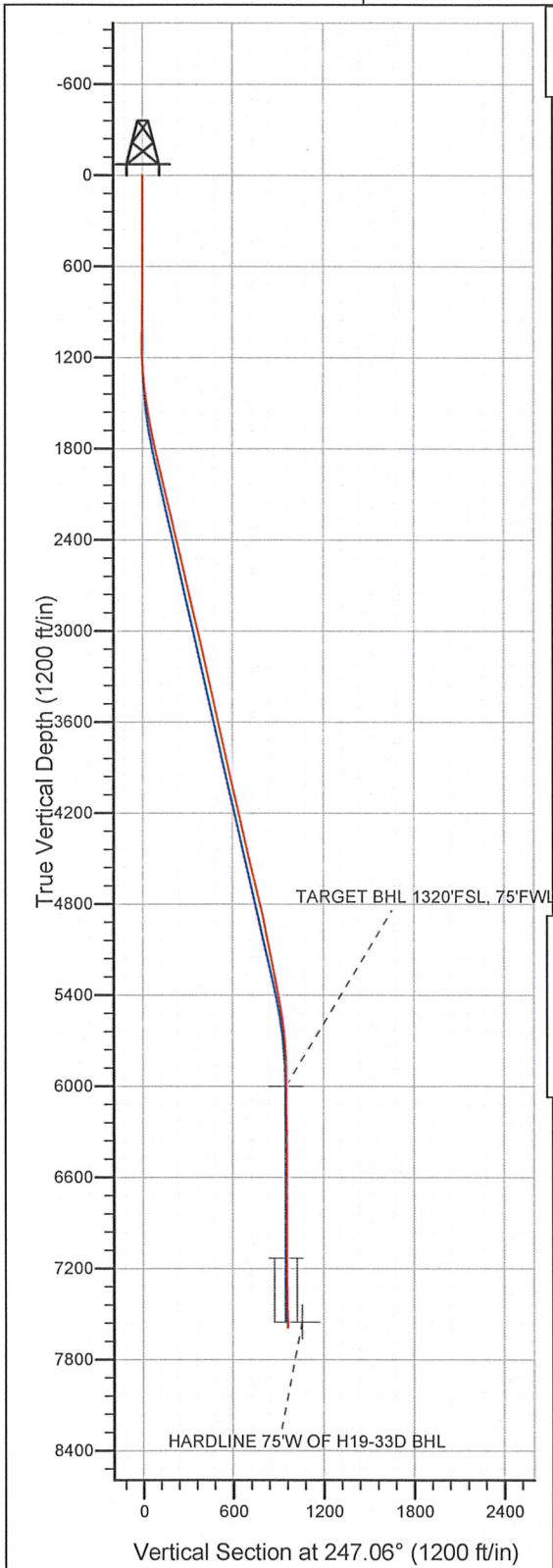


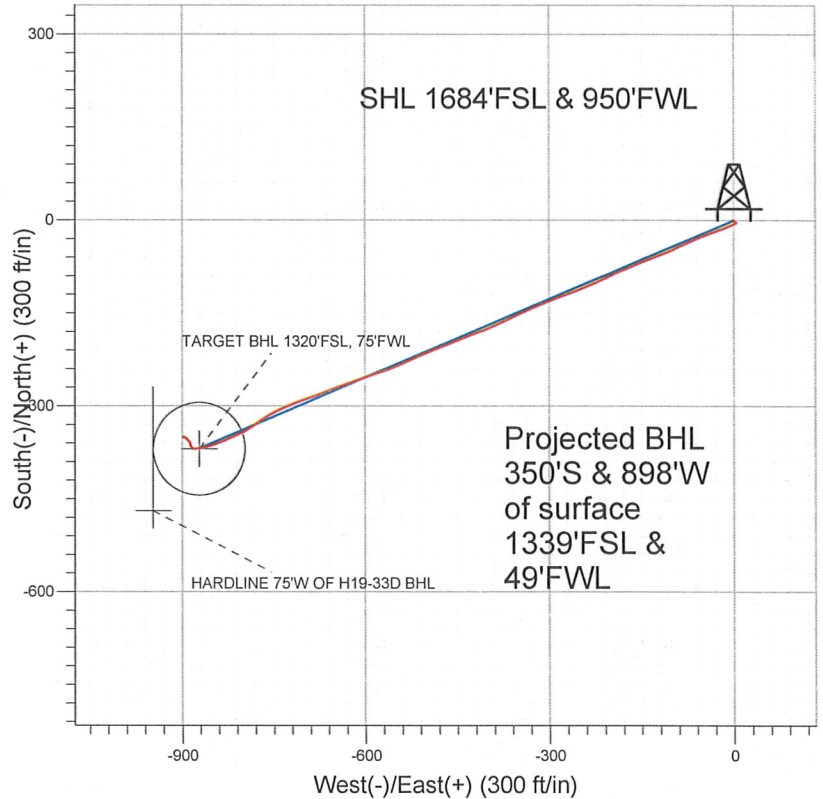
Well Name: **Wardell H19-33D**
 Surface Location: Wardell H19-32D Pad Sec.19-T3N-R65W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4989.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1319695.76	3219988.95	40° 12' 29.808 N	104° 42' 44.424 W	

 Original Well Elev WELL @ 5002.0ft (Original Well Elev)



NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- △ Wardell H19-33D, Wellbore #1, Noble Wardell H19-33D Plan #3 (3-22-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7693'MD & 7590'TVD @ 964'VS
 0.5 deg Inc 255.0 deg AZ

Project: SEC.19-T3N-R65W
 Site: Wardell H19-32D Pad Sec.19-T3N-R65W
 Well: Wardell H19-33D
 Plan: Wellbore #1

Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.19-T3N-R65W
 Site: Wardell H19-32D Pad Sec.19-T3N-R65W
 Well: Wardell H19-33D
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Wardell H19-33D
 TVD Reference: WELL @ 5002.0ft (Original Well Elev)
 MD Reference: WELL @ 5002.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: Landmark

Project	SEC.19-T3N-R65W, 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	Wardell H19-32D Pad Sec.19-T3N-R65W				
Site Position:		Northing:	1,319,655.62 ft	Latitude:	40° 12' 29.412 N
From:	Lat/Long	Easting:	3,219,980.93 ft	Longitude:	104° 42' 44.532 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.51 °

Well	Wardell H19-33D					
Well Position	+N/-S	0.0 ft	Northing:	1,319,695.76 ft	Latitude:	40° 12' 29.808 N
	+E/-W	0.0 ft	Easting:	3,219,988.95 ft	Longitude:	104° 42' 44.424 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,989.0 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/14/2009	9.07	66.97	53,238
	IGRF2010	3/22/2011	8.85	66.91	53,060

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	247.06	

Survey Program	Date 3/28/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
849.0	7,693.0	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	
849.0	0.60	132.90	849.0	-3.0	3.3	-1.8	0.07	0.07	0.00	
943.0	0.40	110.20	943.0	-3.5	3.9	-2.3	0.30	-0.21	-24.15	
1,037.0	0.20	48.60	1,037.0	-3.5	4.4	-2.7	0.37	-0.21	-65.53	
1,130.0	0.50	188.10	1,130.0	-3.8	4.4	-2.6	0.71	0.32	150.00	
1,225.0	2.40	244.30	1,224.9	-5.0	2.6	-0.4	2.28	2.00	59.16	
1,318.0	4.50	243.50	1,317.8	-7.5	-2.5	5.2	2.26	2.26	-0.86	
1,412.0	6.90	249.90	1,411.3	-11.1	-11.1	14.5	2.64	2.55	6.81	
1,506.0	9.30	250.50	1,504.4	-15.6	-23.5	27.7	2.55	2.55	0.64	
1,600.0	10.60	250.30	1,596.9	-21.0	-38.8	43.9	1.38	1.38	-0.21	
1,694.0	12.00	246.70	1,689.1	-27.8	-55.9	62.4	1.67	1.49	-3.83	
1,788.0	12.10	245.80	1,781.0	-35.7	-73.9	82.0	0.23	0.11	-0.96	

Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.19-T3N-R65W
 Site: Wardell H19-32D Pad Sec.19-T3N-R65W
 Well: Wardell H19-33D
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Wardell H19-33D
 TVD Reference: WELL @ 5002.0ft (Original Well Elev)
 MD Reference: WELL @ 5002.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 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)
1,882.0	12.50	244.20	1,872.9	-44.2	-92.0	102.0	0.56	0.43	-1.70
1,976.0	13.80	248.60	1,964.4	-52.7	-111.6	123.4	1.74	1.38	4.68
2,070.0	13.10	248.30	2,055.8	-60.7	-132.0	145.2	0.75	-0.74	-0.32
2,164.0	12.90	246.90	2,147.4	-68.8	-151.5	166.4	0.40	-0.21	-1.49
2,258.0	13.50	249.30	2,239.0	-76.8	-171.4	187.8	0.86	0.64	2.55
2,352.0	13.60	245.50	2,330.3	-85.2	-191.8	209.8	0.95	0.11	-4.04
2,446.0	14.00	243.40	2,421.6	-94.9	-212.0	232.2	0.68	0.43	-2.23
2,539.0	13.80	247.80	2,511.9	-104.1	-232.3	254.5	1.16	-0.22	4.73
2,633.0	13.50	247.10	2,603.3	-112.7	-252.8	276.7	0.36	-0.32	-0.74
2,727.0	12.50	249.80	2,694.8	-120.4	-272.5	297.8	1.24	-1.06	2.87
2,821.0	12.60	249.90	2,786.6	-127.5	-291.6	318.2	0.11	0.11	0.11
2,915.0	14.10	247.40	2,878.1	-135.4	-311.8	339.9	1.71	1.60	-2.66
3,009.0	13.70	247.30	2,969.3	-144.1	-332.7	362.5	0.43	-0.43	-0.11
3,103.0	13.30	243.10	3,060.7	-153.3	-352.6	384.4	1.13	-0.43	-4.47
3,197.0	13.30	246.50	3,152.2	-162.5	-372.1	406.0	0.83	0.00	3.62
3,291.0	11.90	244.60	3,243.9	-170.9	-390.8	426.5	1.55	-1.49	-2.02
3,385.0	13.70	250.50	3,335.6	-178.8	-410.1	447.3	2.36	1.91	6.28
3,479.0	11.60	247.50	3,427.3	-186.2	-429.3	467.9	2.34	-2.23	-3.19
3,573.0	12.30	249.20	3,519.3	-193.3	-447.4	487.4	0.83	0.74	1.81
3,667.0	13.40	247.00	3,610.9	-201.1	-466.8	508.2	1.28	1.17	-2.34
3,761.0	12.60	249.60	3,702.5	-209.0	-486.4	529.4	1.05	-0.85	2.77
3,855.0	12.60	247.10	3,794.2	-216.5	-505.5	549.9	0.58	0.00	-2.66
3,949.0	13.00	244.60	3,885.9	-225.1	-524.5	570.7	0.73	0.43	-2.66
4,043.0	12.30	246.90	3,977.6	-233.5	-543.2	591.3	0.92	-0.74	2.45
4,137.0	12.60	250.10	4,069.4	-240.9	-562.1	611.5	0.80	0.32	3.40
4,231.0	12.90	252.80	4,161.1	-247.5	-581.7	632.2	0.71	0.32	2.87
4,325.0	12.10	250.40	4,252.9	-253.9	-601.0	652.5	1.01	-0.85	-2.55
4,419.0	12.80	250.90	4,344.7	-260.7	-620.2	672.7	0.75	0.74	0.53
4,512.0	13.80	248.80	4,435.2	-268.0	-640.2	694.1	1.19	1.08	-2.26
4,606.0	12.90	249.90	4,526.6	-275.7	-660.5	715.8	0.99	-0.96	1.17
4,700.0	14.00	250.60	4,618.0	-283.1	-681.1	737.6	1.18	1.17	0.74
4,794.0	13.60	250.10	4,709.3	-290.6	-702.2	760.0	0.44	-0.43	-0.53
4,888.0	13.40	247.90	4,800.7	-298.5	-722.7	781.9	0.59	-0.21	-2.34
4,982.0	11.90	246.00	4,892.4	-306.5	-741.7	802.5	1.66	-1.60	-2.02
5,076.0	11.00	237.70	4,984.6	-315.3	-758.1	821.0	1.99	-0.96	-8.83
5,170.0	11.50	235.20	5,076.8	-325.4	-773.4	839.0	0.74	0.53	-2.66
5,264.0	11.90	238.50	5,168.8	-335.8	-789.3	857.8	0.83	0.43	3.51
5,358.0	12.00	244.30	5,260.8	-345.1	-806.4	877.1	1.28	0.11	6.17
5,452.0	9.80	246.80	5,353.1	-352.5	-822.6	894.9	2.39	-2.34	2.66
5,546.0	9.70	249.60	5,445.7	-358.4	-837.3	910.8	0.52	-0.11	2.98
5,640.0	8.60	250.90	5,538.5	-363.5	-851.4	925.7	1.19	-1.17	1.38
5,734.0	7.20	257.90	5,631.6	-367.0	-863.8	938.5	1.80	-1.49	7.45
5,828.0	4.70	261.30	5,725.1	-368.8	-873.4	948.1	2.68	-2.66	3.62
5,922.0	1.20	263.70	5,819.0	-369.5	-878.2	952.7	3.72	-3.72	2.55
6,015.0	0.30	250.70	5,912.0	-369.7	-879.4	953.9	0.98	-0.97	-13.98
6,103.0	0.95	299.71	5,999.9	-369.4	-880.2	954.6	0.89	0.74	55.72
TARGET BHL 1320'FSL, 75'FWL									
6,109.0	1.00	300.60	6,006.0	-369.4	-880.3	954.6	0.89	0.86	14.75
6,203.0	1.10	310.10	6,100.0	-368.4	-881.7	955.5	0.21	0.11	10.11
6,297.0	0.70	320.30	6,193.9	-367.3	-882.7	956.1	0.46	-0.43	10.85
6,391.0	1.20	294.20	6,287.9	-366.5	-884.0	956.9	0.69	0.53	-27.77
6,516.0	2.10	347.50	6,412.9	-363.7	-885.7	957.4	1.35	0.72	42.64
6,578.0	1.60	345.50	6,474.8	-361.8	-886.2	957.1	0.81	-0.81	-3.23
6,672.0	1.10	333.30	6,568.8	-359.7	-886.9	957.0	0.61	-0.53	-12.98

Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.19-T3N-R65W
Site: Wardell H19-32D Pad Sec.19-T3N-R65W
Well: Wardell H19-33D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Wardell H19-33D
TVD Reference: WELL @ 5002.0ft (Original Well Elev)
MD Reference: WELL @ 5002.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
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)
6,860.0	1.20	323.40	6,756.8	-356.5	-888.9	957.5	0.12	0.05	-5.27
6,954.0	0.70	278.90	6,850.8	-355.6	-890.0	958.3	0.91	-0.53	-47.34
7,048.0	0.80	324.10	6,944.8	-355.0	-891.0	958.9	0.62	0.11	48.09
7,142.0	0.40	344.90	7,038.8	-354.2	-891.5	959.0	0.48	-0.43	22.13
7,235.1	0.60	7.06	7,131.9	-353.4	-891.5	958.7	0.29	0.21	23.80
TARGET CIRCLE 1320'FSL, 75'FWL									
7,236.0	0.60	7.20	7,132.8	-353.4	-891.5	958.7	0.29	0.24	15.48
7,330.0	0.50	299.90	7,226.8	-352.7	-891.8	958.7	0.65	-0.11	-71.60
7,424.0	1.60	296.80	7,320.7	-351.9	-893.3	959.8	1.17	1.17	-3.30
7,518.0	1.60	292.30	7,414.7	-350.8	-895.7	961.6	0.13	0.00	-4.79
7,643.0	0.50	255.00	7,539.7	-350.3	-897.8	963.3	0.99	-0.88	-29.84
HARDLINE 75'W OF H19-33D BHL									
7,693.0	0.50	255.00	7,589.7	-350.4	-898.3	963.8	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____