ENSIGN Directional

Well Name: **Dinnel C27-29D**

Surface Location: Dinnel C27-29D Pad Sec.22-T4N-R64W

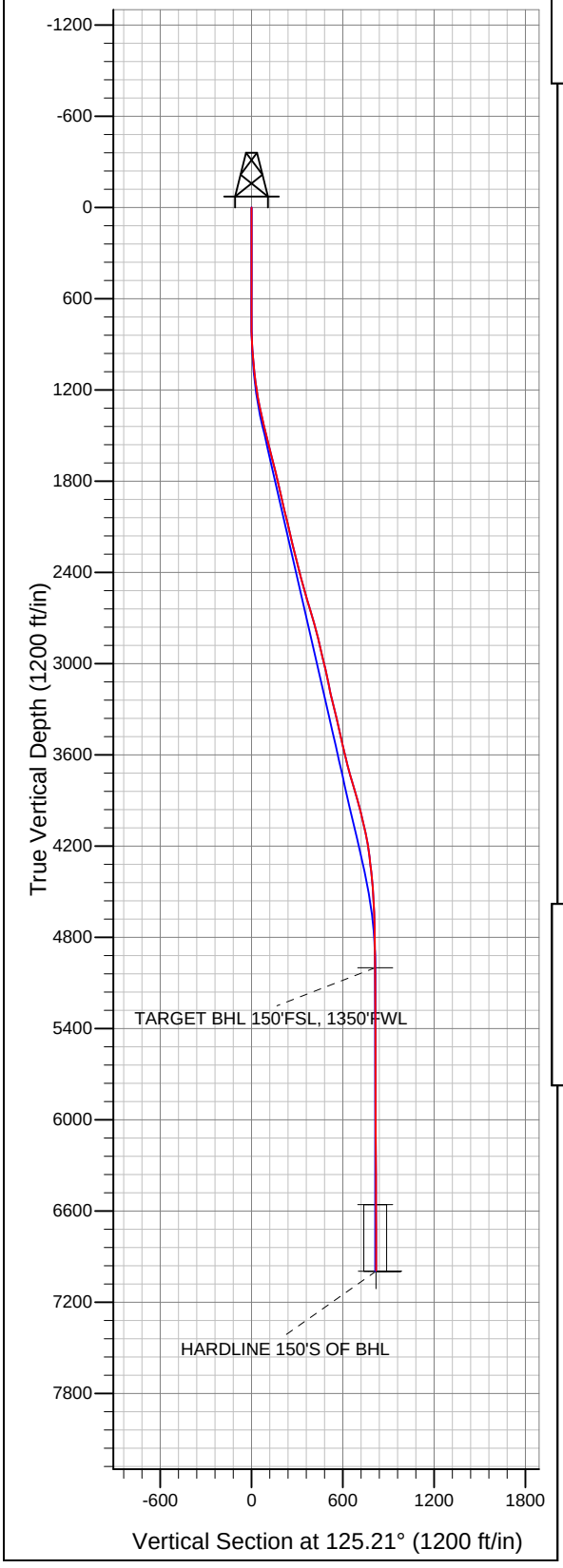
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

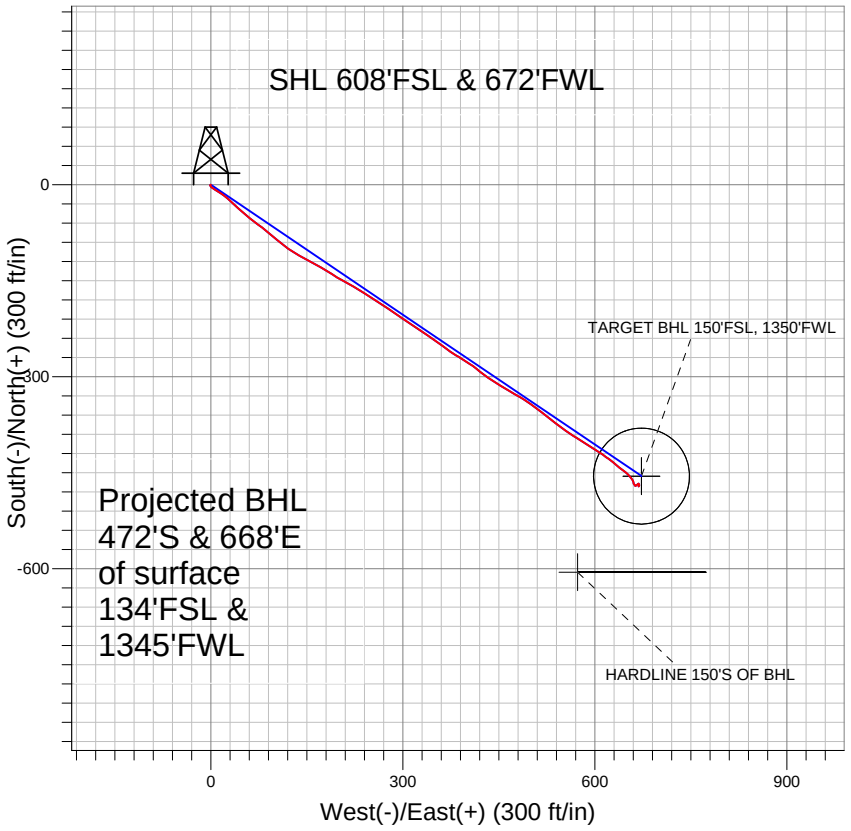
Ground Elevation: 4677.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1350778.13	3266673.56	40° 17' 32.424 N	104° 32' 38.400 W	

Original Well Elev WELL @ 4690.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO





LEGEND

- Dinnel C27-29D, Wellbore #1, Noble Dinnel C27-29D Plan #2 (05-10-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7085'MD & 6992'TVD @ 818' VS
0.5 deg Inc 216.7 deg AZ

Project: SEC.22-T4N-R64W
Site: Dinnel C27-29D Pad Sec.22-T4N-R64W
Well: Dinnel C27-29D
Plan: Wellbore #1

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.22-T4N-R64W
Dinnel C27-29D Pad Sec.22-T4N-R64W
Dinnel C27-29D

Wellbore #1

Survey: Survey #1

Standard Survey Report

01 November, 2010

noble energy

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dinnel C27-29D
Project:	SEC.22-T4N-R64W	**TVD Reference:**	WELL @ 4690.0ft (Original Well Elev)
Site:	Dinnel C27-29D Pad Sec.22-T4N-R64W	**MD Reference:**	WELL @ 4690.0ft (Original Well Elev)
Well:	Dinnel C27-29D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project SEC.22-T4N-R64W, 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 Dinnel C27-29D Pad Sec.22-T4N-R64W

Site Position:		**Northing:**	1,350,778.14 ft	**Latitude:**	40° 17' 32.424 N
From:	Lat/Long	**Easting:**	3,266,673.56 ft	**Longitude:**	104° 32' 38.400 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.62 °

Well Dinnel C27-29D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,350,778.13 ft	**Latitude:**	40° 17' 32.424 N
	+E/-W	0.0 ft	**Easting:**	3,266,673.56 ft	**Longitude:**	104° 32' 38.400 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,677.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/25/2010	8.82	67.02	53,167

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	125.21

Survey Program **Date** 11/1/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
729.0	7,085.0	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
729.0	0.20	244.90	729.0	-0.5	-1.2	-0.6	0.03	0.03	0.00
814.0	1.30	156.40	814.0	-1.5	-0.9	0.1	1.54	1.29	-104.12
900.0	3.00	128.90	899.9	-3.8	1.2	3.2	2.26	1.98	-31.98
985.0	4.50	124.20	984.7	-7.1	5.7	8.8	1.80	1.76	-5.53
1,071.0	5.90	121.60	1,070.4	-11.3	12.3	16.5	1.65	1.63	-3.02
1,156.0	7.80	127.00	1,154.8	-17.0	20.6	26.7	2.36	2.24	6.35
1,242.0	9.60	132.00	1,239.8	-25.3	30.6	39.6	2.27	2.09	5.81
1,327.0	12.20	133.60	1,323.2	-36.3	42.4	55.5	3.08	3.06	1.88
1,413.0	13.50	129.80	1,407.1	-49.0	56.7	74.5	1.80	1.51	-4.42
1,498.0	13.40	125.20	1,489.8	-61.0	72.3	94.3	1.26	-0.12	-5.41
1,584.0	13.80	130.40	1,573.4	-73.4	88.3	114.5	1.50	0.47	6.05
1,669.0	14.40	129.40	1,655.8	-86.7	104.2	135.1	0.76	0.71	-1.18

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dinnel C27-29D
Project:	SEC.22-T4N-R64W	**TVD Reference:**	WELL @ 4690.0ft (Original Well Elev)
Site:	Dinnel C27-29D Pad Sec.22-T4N-R64W	**MD Reference:**	WELL @ 4690.0ft (Original Well Elev)
Well:	Dinnel C27-29D	**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)
1,755.0	14.30	126.20	1,739.1	-99.7	121.0	156.4	0.93	-0.12	-3.72
1,840.0	13.30	119.60	1,821.7	-110.8	138.0	176.6	2.19	-1.18	-7.76
1,925.0	12.90	117.00	1,904.5	-119.9	154.9	195.7	0.84	-0.47	-3.06
2,011.0	13.30	119.50	1,988.2	-129.1	172.1	215.1	0.81	0.47	2.91
2,096.0	13.60	123.40	2,070.9	-139.5	189.0	234.8	1.12	0.35	4.59
2,182.0	13.10	118.80	2,154.6	-149.7	205.9	254.6	1.36	-0.58	-5.35
2,267.0	13.60	119.80	2,237.3	-159.3	223.1	274.1	0.65	0.59	1.18
2,353.0	14.10	123.20	2,320.8	-170.1	240.6	294.6	1.11	0.58	3.95
2,438.0	14.60	122.30	2,403.1	-181.5	258.3	315.7	0.64	0.59	-1.06
2,524.0	15.20	123.80	2,486.2	-193.5	276.9	337.8	0.83	0.70	1.74
2,609.0	16.80	124.30	2,567.9	-206.7	296.3	361.2	1.89	1.88	0.59
2,695.0	16.50	124.40	2,650.3	-220.6	316.6	385.9	0.35	-0.35	0.12
2,781.0	15.70	124.50	2,732.9	-234.1	336.3	409.7	0.93	-0.93	0.12
2,866.0	14.70	124.20	2,815.0	-246.6	354.7	432.0	1.18	-1.18	-0.35
2,952.0	12.00	126.90	2,898.6	-258.1	370.8	451.8	3.22	-3.14	3.14
3,037.0	14.90	121.50	2,981.3	-269.2	387.2	471.6	3.71	3.41	-6.35
3,123.0	12.30	122.40	3,064.9	-279.8	404.4	491.8	3.03	-3.02	1.05
3,209.0	11.30	131.10	3,149.1	-290.3	418.5	509.3	2.37	-1.16	10.12
3,294.0	13.10	124.70	3,232.2	-301.3	432.7	527.2	2.65	2.12	-7.53
3,380.0	13.90	120.20	3,315.8	-312.0	449.6	547.2	1.53	0.93	-5.23
3,465.0	13.40	122.10	3,398.4	-322.4	466.8	567.3	0.79	-0.59	2.24
3,551.0	12.40	117.80	3,482.2	-332.0	483.4	586.4	1.61	-1.16	-5.00
3,637.0	13.00	127.70	3,566.1	-342.2	499.2	605.2	2.62	0.70	11.51
3,722.0	14.40	127.50	3,648.7	-354.5	515.2	625.3	1.65	1.65	-0.24
3,808.0	16.30	127.70	3,731.6	-368.4	533.2	648.0	2.21	2.21	0.23
3,893.0	16.00	125.90	3,813.3	-382.5	552.1	671.7	0.69	-0.35	-2.12
3,979.0	15.80	122.00	3,896.0	-395.7	571.7	695.2	1.26	-0.23	-4.53
4,065.0	14.50	122.70	3,979.0	-407.7	590.7	717.7	1.53	-1.51	0.81
4,150.0	13.00	123.00	4,061.6	-418.7	607.6	737.8	1.77	-1.76	0.35
4,236.0	10.90	126.80	4,145.7	-428.8	622.3	755.6	2.61	-2.44	4.42
4,321.0	7.80	131.50	4,229.5	-437.4	633.0	769.4	3.75	-3.65	5.53
4,407.0	6.70	125.40	4,314.9	-444.2	641.5	780.2	1.56	-1.28	-7.09
4,493.0	5.80	131.10	4,400.3	-450.0	648.8	789.6	1.27	-1.05	6.63
4,578.0	4.60	138.90	4,485.0	-455.4	654.3	797.2	1.64	-1.41	9.18
4,664.0	3.00	146.60	4,570.8	-459.8	657.8	802.6	1.95	-1.86	8.95
4,707.0	2.00	143.20	4,613.8	-461.4	658.9	804.4	2.35	-2.33	-7.91
4,749.0	2.10	158.00	4,655.7	-462.7	659.6	805.7	1.28	0.24	35.24
4,835.0	1.90	173.40	4,741.7	-465.6	660.4	808.0	0.66	-0.23	17.91
4,921.0	0.70	144.30	4,827.7	-467.4	660.8	809.4	1.55	-1.40	-33.84
5,092.0	0.60	144.70	4,998.7	-469.0	662.0	811.3	0.06	-0.06	0.23
5,263.0	0.50	152.80	5,169.6	-470.4	662.8	812.8	0.07	-0.06	4.74
5,434.0	0.40	55.00	5,340.6	-470.7	663.7	813.6	0.40	-0.06	-57.19
5,606.0	0.80	49.10	5,512.6	-469.6	665.1	814.1	0.24	0.23	-3.43
5,777.0	0.70	49.00	5,683.6	-468.1	666.7	814.7	0.06	-0.06	-0.06
5,948.0	0.20	66.70	5,854.6	-467.3	667.8	815.1	0.30	-0.29	10.35
6,119.0	0.10	69.70	6,025.6	-467.1	668.2	815.3	0.06	-0.06	1.75
6,291.0	0.20	148.80	6,197.6	-467.3	668.5	815.7	0.12	0.06	45.99
6,462.0	0.40	145.50	6,368.6	-468.1	669.0	816.5	0.12	0.12	-1.93
6,633.0	0.30	189.10	6,539.6	-469.0	669.3	817.3	0.16	-0.06	25.50
6,804.0	0.30	182.30	6,710.6	-469.9	669.2	817.7	0.02	0.00	-3.98
7,038.0	0.50	216.70	6,944.6	-471.3	668.6	818.0	0.13	0.09	14.70
7,085.0	0.50	216.70	6,991.6	-471.7	668.3	818.0	0.00	0.00	0.00

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Dinnel C27-29D
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Well:	Dinnel C27-29D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Checked By: _____ Approved By: _____ Date: _____