

Well Name: **Hoff PC D06-28D**

Surface Location: Hoff PC D06-28D Pad Sec.6-T3N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

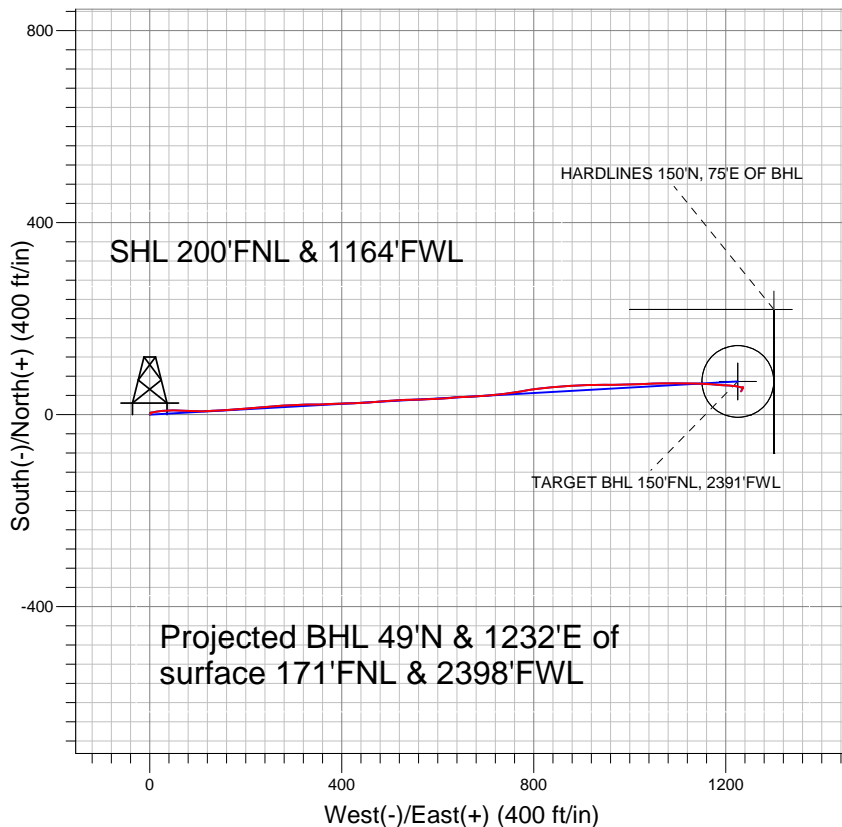
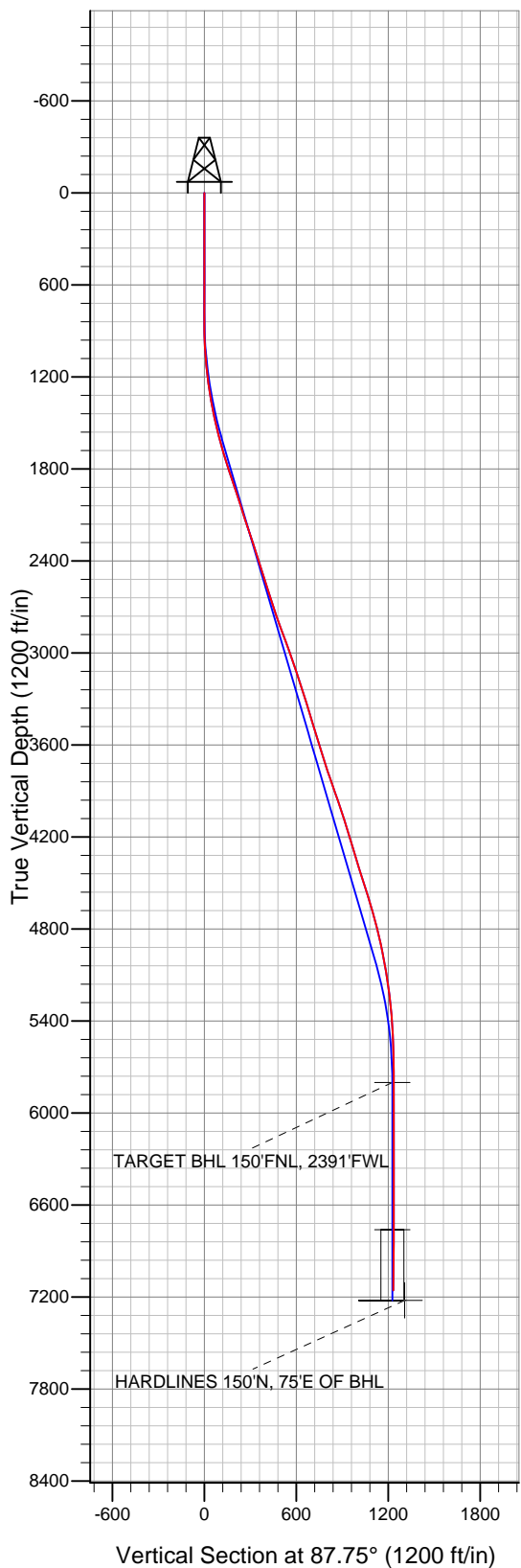
Ground Elevation: 4838.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1339199.72	3251651.76	40° 15' 39.564 N	104° 35' 53.772 W

Original Well Elev WELL @ 4851.0ft (Original Well Elev)

Slot

NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- Hoff PC D06-28D, Wellbore #1, Noble Hoff PC D06-28D Plan #1 (06-16-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7336'MD & 7156'TVD @ 1233' VS
0.9 deg Inc 213.10 deg AZ

Project: SEC.6-T3N-R64W
Site: Hoff PC D06-28D Pad Sec.6-T3N-R64W
Well: Hoff PC D06-28D
Plan: Wellbore #1



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.6-T3N-R64W

Hoff PC D06-28D Pad Sec.6-T3N-R64W

Hoff PC D06-28D

Wellbore #1

Survey: Survey #1

Standard Survey Report

09 December, 2010



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Hoff PC D06-28D
Project:	SEC.6-T3N-R64W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Hoff PC D06-28D Pad Sec.6-T3N-R64W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Well:	Hoff PC D06-28D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.6-T3N-R64W, 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	Hoff PC D06-28D Pad Sec.6-T3N-R64W		
Site Position:		Northing:	1,339,199.73ft
From:	Lat/Long	Easting:	3,251,651.76ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 15' 39.564 N
		Longitude:	104° 35' 53.772 W
		Grid Convergence:	0.58 °

Well	Hoff PC D06-28D		
Well Position	+N/-S	0.0 ft	Northing: 1,339,199.72 ft
	+E/-W	0.0 ft	Easting: 3,251,651.76 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 15' 39.564 N
		Longitude:	104° 35' 53.772 W
		Ground Level:	4,838.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/25/2010	8.85	66.99	53,144

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	87.75

Survey Program	Date	12/9/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
852.0	7,336.0	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
852.0	0.50	8.60	852.0	3.7	0.6	0.7	0.06	0.06	0.00
947.0	1.70	85.00	947.0	4.2	2.0	2.2	1.74	1.26	80.42
1,038.0	3.70	80.00	1,037.9	4.8	6.3	6.4	2.21	2.20	-5.49
1,134.0	5.70	81.10	1,133.5	6.1	14.0	14.2	2.09	2.08	1.15
1,228.0	7.50	80.70	1,226.9	7.8	24.7	25.0	1.92	1.91	-0.43
1,321.0	8.90	89.70	1,319.0	8.8	37.9	38.2	2.04	1.51	9.68
1,415.0	11.30	90.70	1,411.5	8.8	54.4	54.7	2.56	2.55	1.06
1,509.0	13.40	93.20	1,503.3	8.0	74.4	74.7	2.30	2.23	2.66
1,602.0	14.70	90.50	1,593.5	7.3	97.0	97.2	1.57	1.40	-2.90
1,695.0	15.90	88.10	1,683.2	7.7	121.5	121.7	1.46	1.29	-2.58
1,789.0	18.00	86.20	1,773.2	9.1	148.9	149.1	2.31	2.23	-2.02
1,883.0	18.40	85.30	1,862.5	11.2	178.2	178.5	0.52	0.43	-0.96

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Hoff PC D06-28D
Project:	SEC.6-T3N-R64W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Hoff PC D06-28D Pad Sec.6-T3N-R64W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Well:	Hoff PC D06-28D	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)	
1,976.0	18.30	86.40	1,950.7	13.4	207.4	207.7	0.39	-0.11	1.18	
2,070.0	17.90	84.60	2,040.1	15.6	236.5	236.9	0.73	-0.43	-1.91	
2,163.0	18.20	85.50	2,128.5	18.1	265.2	265.7	0.44	0.32	0.97	
2,257.0	18.30	87.50	2,217.8	19.9	294.6	295.1	0.67	0.11	2.13	
2,350.0	18.10	90.20	2,306.1	20.5	323.6	324.2	0.93	-0.22	2.90	
2,444.0	17.90	87.30	2,395.5	21.1	352.6	353.2	0.98	-0.21	-3.09	
2,538.0	18.00	86.90	2,484.9	22.6	381.6	382.2	0.17	0.11	-0.43	
2,631.0	17.80	88.40	2,573.4	23.8	410.1	410.7	0.54	-0.22	1.61	
2,725.0	17.10	88.40	2,663.1	24.6	438.3	438.9	0.74	-0.74	0.00	
2,819.0	19.90	84.70	2,752.3	26.4	468.1	468.7	3.23	2.98	-3.94	
2,912.0	19.80	86.00	2,839.7	29.0	499.5	500.3	0.49	-0.11	1.40	
3,006.0	19.80	87.70	2,928.2	30.7	531.3	532.1	0.61	0.00	1.81	
3,099.0	20.00	88.30	3,015.6	31.8	563.0	563.8	0.31	0.22	0.65	
3,193.0	17.80	88.00	3,104.5	32.8	593.4	594.2	2.34	-2.34	-0.32	
3,287.0	18.90	84.80	3,193.8	34.7	622.9	623.8	1.59	1.17	-3.40	
3,380.0	17.40	86.20	3,282.1	37.0	651.8	652.7	1.68	-1.61	1.51	
3,474.0	16.70	88.40	3,372.0	38.3	679.3	680.3	1.01	-0.74	2.34	
3,567.0	17.20	84.20	3,461.0	40.1	706.3	707.4	1.42	0.54	-4.52	
3,661.0	17.50	84.20	3,550.7	42.9	734.2	735.4	0.32	0.32	0.00	
3,755.0	17.50	80.00	3,640.3	46.8	762.2	763.5	1.34	0.00	-4.47	
3,848.0	17.80	80.50	3,729.0	51.5	790.0	791.4	0.36	0.32	0.54	
3,942.0	18.80	84.60	3,818.2	55.3	819.3	820.8	1.73	1.06	4.36	
4,035.0	19.50	85.40	3,906.1	58.0	849.6	851.3	0.80	0.75	0.86	
4,129.0	19.40	86.70	3,994.7	60.2	880.9	882.6	0.47	-0.11	1.38	
4,223.0	17.50	87.60	4,083.9	61.6	910.6	912.3	2.04	-2.02	0.96	
4,316.0	16.40	90.50	4,172.8	62.1	937.7	939.4	1.49	-1.18	3.12	
4,409.0	17.70	89.00	4,261.7	62.2	964.9	966.6	1.48	1.40	-1.61	
4,503.0	16.40	88.70	4,351.6	62.8	992.5	994.2	1.39	-1.38	-0.32	
4,597.0	17.80	87.70	4,441.4	63.7	1,020.1	1,021.8	1.52	1.49	-1.06	
4,691.0	18.00	88.00	4,530.9	64.8	1,049.0	1,050.7	0.23	0.21	0.32	
4,784.0	16.70	89.70	4,619.7	65.3	1,076.7	1,078.5	1.50	-1.40	1.83	
4,878.0	15.60	89.80	4,710.0	65.4	1,102.9	1,104.6	1.17	-1.17	0.11	
4,971.0	13.90	90.60	4,799.9	65.4	1,126.5	1,128.2	1.84	-1.83	0.86	
5,065.0	12.60	93.50	4,891.4	64.6	1,148.1	1,149.7	1.55	-1.38	3.09	
5,159.0	10.60	93.90	4,983.5	63.4	1,166.9	1,168.5	2.13	-2.13	0.43	
5,252.0	9.90	94.10	5,075.0	62.3	1,183.4	1,185.0	0.75	-0.75	0.22	
5,346.0	8.20	92.60	5,167.8	61.4	1,198.2	1,199.7	1.83	-1.81	-1.60	
5,439.0	6.60	95.80	5,260.0	60.5	1,210.1	1,211.6	1.78	-1.72	3.44	
5,533.0	5.10	98.80	5,353.5	59.4	1,219.6	1,221.0	1.63	-1.60	3.19	
5,626.0	3.40	100.70	5,446.3	58.2	1,226.4	1,227.8	1.83	-1.83	2.04	
5,720.0	2.10	106.70	5,540.2	57.2	1,230.8	1,232.1	1.41	-1.38	6.38	
5,814.0	1.50	109.70	5,634.1	56.3	1,233.6	1,234.9	0.65	-0.64	3.19	
5,907.0	0.10	69.50	5,727.1	55.9	1,234.9	1,236.1	1.53	-1.51	-43.23	
5,979.9	0.09	17.74	5,800.0	56.0	1,234.9	1,236.2	0.11	-0.01	-71.00	
TARGET BHL 150'FNL, 2391'FWL										
6,001.0	0.10	4.60	5,821.1	56.0	1,234.9	1,236.2	0.11	0.05	-62.27	
6,095.0	0.30	351.00	5,915.1	56.3	1,234.9	1,236.2	0.22	0.21	-14.47	
6,188.0	0.20	0.70	6,008.1	56.7	1,234.9	1,236.1	0.12	-0.11	10.43	
6,282.0	0.30	54.60	6,102.1	57.0	1,235.1	1,236.4	0.26	0.11	57.34	
6,376.0	0.10	99.50	6,196.1	57.2	1,235.4	1,236.7	0.26	-0.21	47.77	
6,469.0	0.10	55.00	6,289.1	57.2	1,235.5	1,236.8	0.08	0.00	-47.85	
6,563.0	0.10	105.10	6,383.1	57.2	1,235.6	1,236.9	0.09	0.00	53.30	
6,656.0	0.10	146.30	6,476.1	57.1	1,235.8	1,237.1	0.08	0.00	44.30	
6,750.0	0.20	152.60	6,570.1	56.9	1,235.9	1,237.2	0.11	0.11	6.70	

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Site:	Hoff PC D06-28D Pad Sec.6-T3N-R64W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Well:	Hoff PC D06-28D	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)	
6,843.0	0.30	200.80	6,663.1	56.6	1,235.9	1,237.2	0.24	0.11	51.83	
6,937.0	0.60	204.60	6,757.1	55.9	1,235.6	1,236.8	0.32	0.32	4.04	
6,940.8	0.61	204.63	6,760.9	55.8	1,235.6	1,236.8	0.32	0.32	0.78	
TARGET CIRCLE 150'FNL, 2391'FWL										
7,031.0	0.90	205.10	6,851.1	54.8	1,235.1	1,236.3	0.32	0.32	0.52	
7,124.0	1.40	207.60	6,944.1	53.1	1,234.2	1,235.4	0.54	0.54	2.69	
7,218.0	1.50	205.30	7,038.0	51.0	1,233.2	1,234.2	0.12	0.11	-2.45	
7,311.0	1.30	206.20	7,131.0	48.9	1,232.2	1,233.2	0.22	-0.22	0.97	
7,336.0	0.90	213.10	7,156.0	48.5	1,232.0	1,232.9	1.68	-1.60	27.60	
HARDLINES 150'N, 75'E OF BHL										

Checked By: _____	Approved By: _____	Date: _____
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