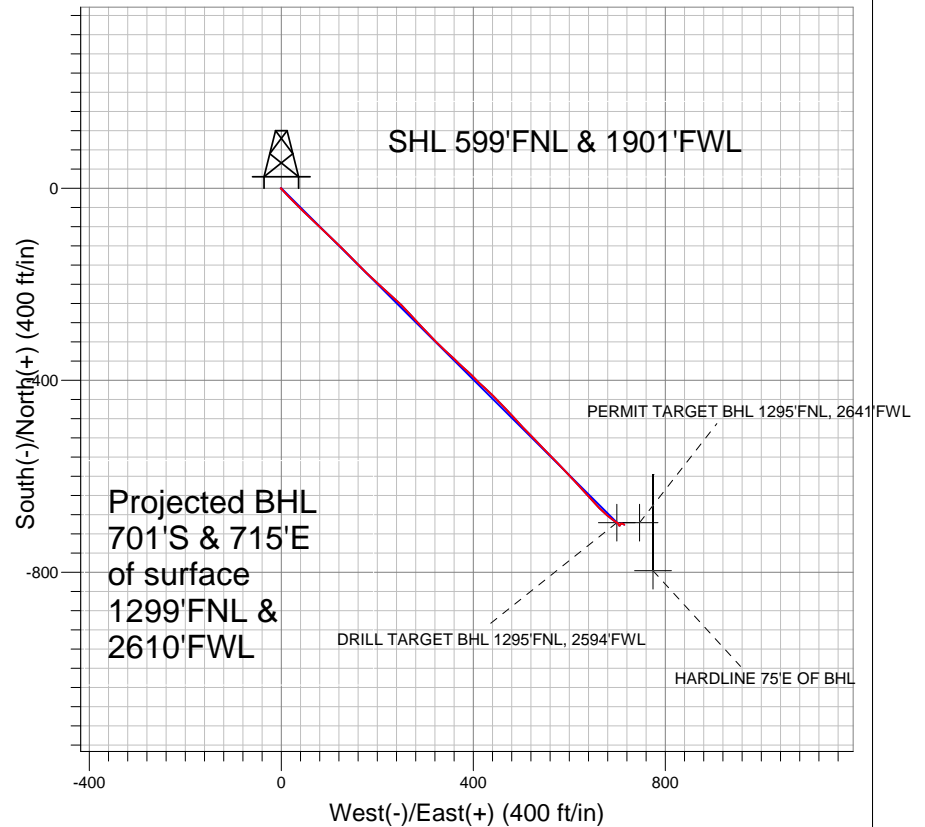
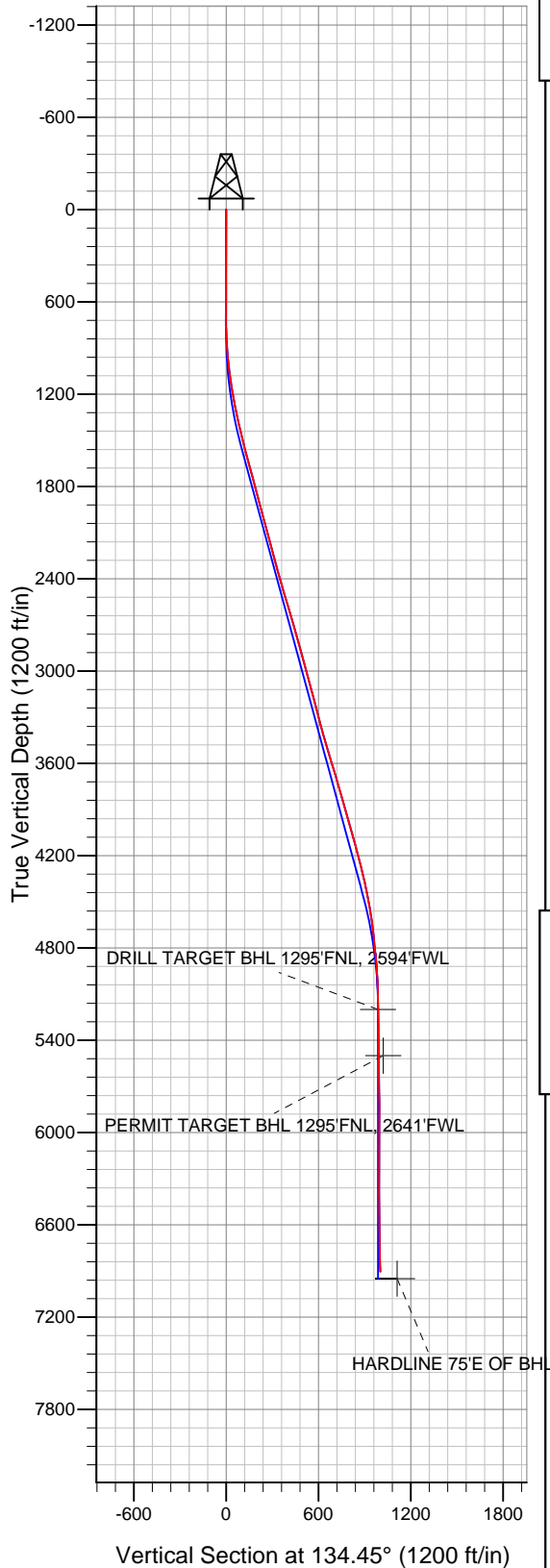


PETROLEUM DEVELOPMENT CORP Weld County CO



LEGEND

- ✕ Bauer Debus 22ND, Wellbore #1, Plan #2 (5-15-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7028'MD & 6904'TVD @ 1001' VS
 1.1 deg Inc 126.8 deg AZ

Project: SEC.22-T5N-R64W
 Site: Bauer Debus 22ND Pad Sec.22-T5N-R64W
 Well: Bauer Debus 22ND
 Plan: Wellbore #1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.22-T5N-R64W

Bauer Debus 22ND Pad Sec.22-T5N-R64W

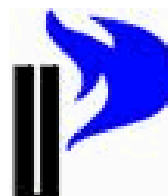
Bauer Debus 22ND

Wellbore #1

Survey: Survey #1

Standard Survey Report

20 October, 2010





Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Bauer Debus 22ND
Project:	SEC.22-T5N-R64W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Bauer Debus 22ND Pad Sec.22-T5N-R64W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Well:	Bauer Debus 22ND	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.22-T5N-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	Bauer Debus 22ND Pad Sec.22-T5N-R64W		
Site Position:		Northing:	1,386,540.25 ft
From:	Lat/Long	Easting:	3,267,783.89 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 23' 25.692 N
		Longitude:	104° 32' 19.068 W
		Grid Convergence:	0.62 °

Well	Bauer Debus 22ND		
Well Position	+N/-S	0.0 ft	Northing: 1,386,540.24 ft
	+E/-W	0.0 ft	Easting: 3,267,783.89 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 23' 25.692 N
		Longitude:	104° 32' 19.068 W
		Ground Level:	4,575.0 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	10/7/2010	8.83
			Dip Angle (°)
			67.10
			Field Strength (nT)
			53,226

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)
	0.0	0.0	0.0
			Direction (°)
			134.45

Survey Program	Date 10/20/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
732.0	7,028.0	Survey #1 (Wellbore #1)	MWD
			Description
			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
732.0	0.20	274.10	732.0	0.1	-1.3	-1.0	0.03	0.03	0.00
827.0	2.90	135.00	827.0	-1.6	0.3	1.3	3.21	2.84	-146.42
922.0	5.10	133.90	921.7	-6.2	5.0	7.9	2.32	2.32	-1.16
1,017.0	5.90	136.10	1,016.3	-12.7	11.4	17.0	0.87	0.84	2.32
1,111.0	8.30	136.80	1,109.6	-21.1	19.4	28.6	2.55	2.55	0.74
1,206.0	9.90	136.00	1,203.4	-32.0	29.8	43.7	1.69	1.68	-0.84
1,300.0	11.70	135.70	1,295.7	-44.6	42.1	61.3	1.92	1.91	-0.32
1,396.0	12.50	132.50	1,389.6	-58.6	56.5	81.4	1.09	0.83	-3.33
1,492.0	13.70	132.90	1,483.1	-73.4	72.5	103.1	1.25	1.25	0.42
1,586.0	15.10	134.10	1,574.1	-89.4	89.5	126.5	1.52	1.49	1.28
1,681.0	15.20	133.40	1,665.8	-106.6	107.4	151.3	0.22	0.11	-0.74



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Bauer Debus 22ND
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Site:	Bauer Debus 22ND Pad Sec.22-T5N-R64W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Well:	Bauer Debus 22ND	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)
1,775.0	14.80	135.40	1,756.6	-123.6	124.8	175.7	0.70	-0.43	2.13
1,869.0	15.20	135.00	1,847.4	-140.9	141.9	200.0	0.44	0.43	-0.43
1,963.0	15.40	134.70	1,938.1	-158.4	159.5	224.8	0.23	0.21	-0.32
2,057.0	15.30	134.00	2,028.7	-175.8	177.3	249.7	0.22	-0.11	-0.74
2,153.0	14.80	133.00	2,121.4	-192.9	195.4	274.6	0.59	-0.52	-1.04
2,247.0	14.50	133.70	2,212.4	-209.3	212.7	298.4	0.37	-0.32	0.74
2,343.0	15.50	130.60	2,305.1	-225.9	231.1	323.2	1.34	1.04	-3.23
2,439.0	15.90	135.70	2,397.5	-243.7	250.0	349.1	1.50	0.42	5.31
2,534.0	16.30	136.70	2,488.8	-262.7	268.3	375.5	0.51	0.42	1.05
2,628.0	16.50	137.10	2,579.0	-282.1	286.4	402.0	0.24	0.21	0.43
2,723.0	16.50	136.90	2,670.0	-301.8	304.8	428.9	0.06	0.00	-0.21
2,818.0	15.20	134.30	2,761.4	-320.4	322.9	454.9	1.56	-1.37	-2.74
2,912.0	15.90	133.40	2,852.0	-337.8	341.1	480.1	0.79	0.74	-0.96
3,007.0	15.70	134.00	2,943.4	-355.7	359.8	505.9	0.27	-0.21	0.63
3,101.0	15.00	131.10	3,034.1	-372.5	378.1	530.8	1.11	-0.74	-3.09
3,196.0	14.80	135.80	3,125.9	-389.3	395.8	555.2	1.29	-0.21	4.95
3,291.0	14.80	132.50	3,217.7	-406.2	413.2	579.4	0.89	0.00	-3.47
3,386.0	14.40	134.10	3,309.6	-422.6	430.7	603.4	0.60	-0.42	1.68
3,480.0	15.70	134.60	3,400.4	-439.7	448.1	627.8	1.39	1.38	0.53
3,575.0	16.40	137.20	3,491.7	-458.5	466.4	654.0	1.06	0.74	2.74
3,670.0	16.90	136.80	3,582.7	-478.4	484.9	681.2	0.54	0.53	-0.42
3,764.0	16.80	136.20	3,672.7	-498.2	503.7	708.5	0.21	-0.11	-0.64
3,859.0	16.40	135.70	3,763.7	-517.7	522.6	735.6	0.45	-0.42	-0.53
3,953.0	15.20	136.60	3,854.2	-536.2	540.3	761.2	1.30	-1.28	0.96
4,048.0	16.70	135.50	3,945.5	-554.9	558.4	787.3	1.61	1.58	-1.16
4,141.0	15.70	137.00	4,034.8	-573.7	576.4	813.2	1.17	-1.08	1.61
4,236.0	15.30	135.80	4,126.4	-592.1	593.9	838.6	0.54	-0.42	-1.26
4,330.0	14.40	138.00	4,217.2	-609.6	610.4	862.6	1.13	-0.96	2.34
4,425.0	13.80	137.70	4,309.4	-626.8	625.9	885.7	0.64	-0.63	-0.32
4,518.0	11.60	136.80	4,400.1	-641.8	639.8	906.2	2.38	-2.37	-0.97
4,612.0	10.90	137.50	4,492.3	-655.3	652.2	924.5	0.76	-0.74	0.74
4,707.0	8.90	136.20	4,585.9	-667.2	663.4	940.8	2.12	-2.11	-1.37
4,802.0	6.50	132.60	4,680.0	-676.1	672.4	953.5	2.58	-2.53	-3.79
4,897.0	6.10	126.70	4,774.4	-682.8	680.4	963.9	0.80	-0.42	-6.21
4,993.0	5.40	125.30	4,869.9	-688.5	688.2	973.4	0.74	-0.73	-1.46
5,088.0	3.60	129.50	4,964.7	-692.9	694.2	980.8	1.92	-1.89	4.42
5,182.0	2.00	125.30	5,058.5	-695.8	697.8	985.3	1.71	-1.70	-4.47
5,278.0	0.70	104.90	5,154.5	-696.9	699.7	987.5	1.42	-1.35	-21.25
5,373.0	0.40	120.90	5,249.5	-697.2	700.6	988.3	0.35	-0.32	16.84
5,468.0	0.80	146.30	5,344.5	-697.9	701.2	989.3	0.50	0.42	26.74
5,563.0	0.80	150.40	5,439.5	-699.1	701.9	990.6	0.06	0.00	4.32
5,657.0	0.80	150.90	5,533.5	-700.2	702.5	991.9	0.01	0.00	0.53
5,753.0	1.00	155.10	5,629.5	-701.5	703.2	993.3	0.22	0.21	4.38
5,847.0	0.60	144.00	5,723.5	-702.7	703.9	994.5	0.45	-0.43	-11.81
5,941.0	0.40	108.80	5,817.5	-703.2	704.5	995.3	0.38	-0.21	-37.45
6,036.0	0.40	52.90	5,912.5	-703.1	705.0	995.7	0.39	0.00	-58.84
6,131.0	0.70	28.70	6,007.5	-702.4	705.6	995.6	0.39	0.32	-25.47
6,226.0	0.80	21.50	6,102.4	-701.3	706.1	995.1	0.14	0.11	-7.58
6,321.0	0.80	25.30	6,197.4	-700.0	706.6	994.7	0.06	0.00	4.00
6,416.0	0.80	49.50	6,292.4	-699.0	707.4	994.5	0.35	0.00	25.47
6,510.0	0.70	64.50	6,386.4	-698.3	708.4	994.8	0.23	-0.11	15.96
6,604.0	0.60	91.90	6,480.4	-698.1	709.4	995.3	0.34	-0.11	29.15
6,699.0	0.70	124.10	6,575.4	-698.4	710.4	996.3	0.39	0.11	33.89



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6,793.0	0.80	118.30	6,669.4	-699.1	711.5	997.5	0.13	0.11	-6.17
6,888.0	0.90	116.80	6,764.4	-699.7	712.7	998.8	0.11	0.11	-1.58
6,984.0	1.10	126.80	6,860.4	-700.6	714.1	1,000.4	0.28	0.21	10.42
7,028.0	1.10	126.80	6,904.4	-701.1	714.8	1,001.3	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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