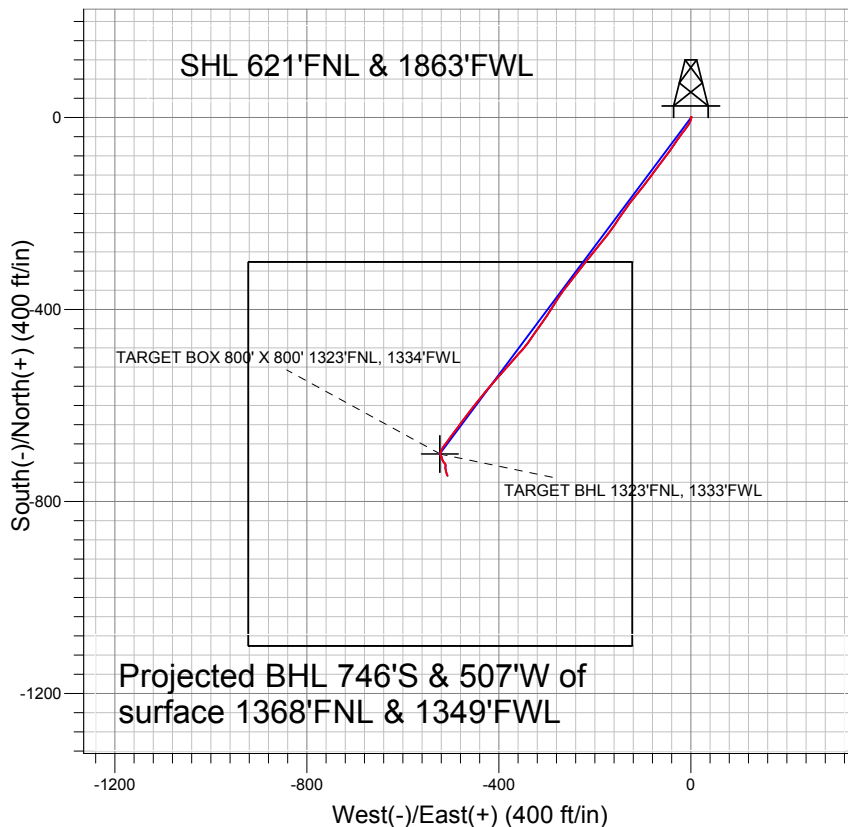
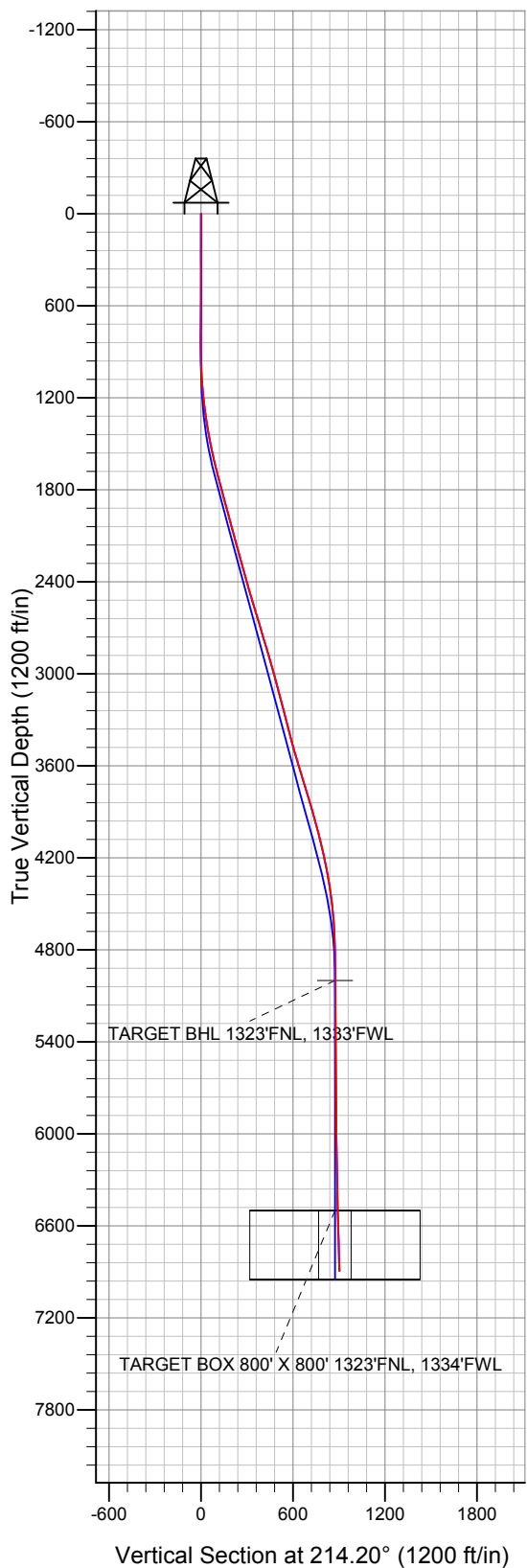


PETROLEUM DEVELOPMENT CORP Weld County CO



LEGEND

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

Final Survey Plot

Projected Final Survey -
 7005'MD & 6894'TVD @ 902' VS
 2.0 deg Inc 157.6 deg AZ

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



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.22-T5N-R64W

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

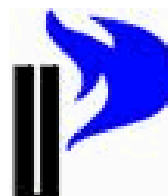
Bauer Debus 22AD

Wellbore #1

Survey: Survey #1

Standard Survey Report

01 November, 2010





Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Bauer Debus 22AD
Project:	SEC.22-T5N-R64W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Bauer Debus 22AD Pad Sec.22-T5N-R64W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Well:	Bauer Debus 22AD	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 22AD Pad Sec.22-T5N-R64W		
Site Position:		Northing:	1,386,514.33 ft
From:	Lat/Long	Easting:	3,267,745.18 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 23' 25.440 N
		Longitude:	104° 32' 19.572 W
		Grid Convergence:	0.62 °

Well	Bauer Debus 22AD		
Well Position	+N/-S	0.0 ft	Northing: 1,386,514.32 ft
	+E/-W	0.0 ft	Easting: 3,267,745.18 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 23' 25.440 N
		Longitude:	104° 32' 19.572 W
		Ground Level:	4,575.0 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	10/19/2010	8.83
			Dip Angle (°)
			67.10
			Field Strength (nT)
			53,222

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 (°)
			214.20

Survey Program	Date 11/1/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
733.0	7,005.0	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
733.0	0.20	42.90	733.0	0.9	0.9	-1.3	0.03	0.03	0.00
828.0	0.20	39.50	828.0	1.2	1.1	-1.6	0.01	0.00	-3.58
923.0	0.70	188.40	923.0	0.7	1.1	-1.2	0.92	0.53	156.74
1,018.0	3.30	196.80	1,017.9	-2.5	0.2	1.9	2.75	2.74	8.84
1,112.0	4.30	198.20	1,111.7	-8.4	-1.6	7.9	1.07	1.06	1.49
1,207.0	6.40	214.90	1,206.3	-16.1	-5.8	16.6	2.73	2.21	17.58
1,302.0	8.10	219.00	1,300.5	-25.7	-13.0	28.5	1.87	1.79	4.32
1,397.0	9.10	214.50	1,394.5	-37.1	-21.5	42.7	1.27	1.05	-4.74
1,493.0	10.90	215.40	1,489.0	-50.7	-31.1	59.4	1.88	1.88	0.94
1,587.0	12.80	215.60	1,581.0	-66.4	-42.3	78.7	2.02	2.02	0.21
1,682.0	14.30	216.40	1,673.4	-84.4	-55.4	100.9	1.59	1.58	0.84



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Bauer Debus 22AD
Project:	SEC.22-T5N-R64W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Bauer Debus 22AD Pad Sec.22-T5N-R64W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Well:	Bauer Debus 22AD	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)
1,776.0	15.10	217.30	1,764.3	-103.5	-69.7	124.8	0.89	0.85	0.96
1,870.0	15.40	215.80	1,855.0	-123.4	-84.4	149.5	0.53	0.32	-1.60
1,964.0	15.30	218.40	1,945.6	-143.2	-99.4	174.3	0.74	-0.11	2.77
2,058.0	15.20	219.50	2,036.3	-162.4	-114.9	199.0	0.33	-0.11	1.17
2,154.0	14.60	216.10	2,129.1	-181.9	-130.1	223.6	1.10	-0.63	-3.54
2,249.0	15.60	214.50	2,220.8	-202.1	-144.4	248.3	1.14	1.05	-1.68
2,344.0	15.80	214.10	2,312.3	-223.4	-158.8	274.0	0.24	0.21	-0.42
2,440.0	15.90	217.50	2,404.6	-244.6	-174.2	300.2	0.97	0.10	3.54
2,535.0	15.90	219.70	2,496.0	-265.0	-190.4	326.2	0.63	0.00	2.32
2,629.0	17.10	218.50	2,586.1	-285.7	-207.2	352.8	1.33	1.28	-1.28
2,724.0	17.00	217.60	2,676.9	-307.6	-224.4	380.6	0.30	-0.11	-0.95
2,819.0	16.40	217.90	2,767.9	-329.2	-241.1	407.8	0.64	-0.63	0.32
2,913.0	16.80	218.40	2,858.0	-350.3	-257.7	434.6	0.45	0.43	0.53
3,008.0	16.20	214.60	2,949.1	-372.0	-273.8	461.5	1.30	-0.63	-4.00
3,102.0	14.80	211.20	3,039.7	-393.1	-287.4	486.6	1.77	-1.49	-3.62
3,197.0	14.90	214.00	3,131.5	-413.6	-300.5	511.0	0.76	0.11	2.95
3,292.0	14.70	215.30	3,223.4	-433.5	-314.3	535.2	0.41	-0.21	1.37
3,387.0	14.50	214.00	3,315.3	-453.2	-328.0	559.2	0.40	-0.21	-1.37
3,481.0	14.40	218.10	3,406.3	-472.2	-341.7	582.6	1.09	-0.11	4.36
3,576.0	16.10	221.60	3,498.0	-491.3	-357.8	607.5	2.03	1.79	3.68
3,671.0	16.80	221.80	3,589.1	-511.4	-375.7	634.1	0.74	0.74	0.21
3,765.0	17.10	221.40	3,679.0	-531.9	-393.9	661.3	0.34	0.32	-0.43
3,860.0	17.40	220.90	3,769.7	-553.1	-412.4	689.3	0.35	0.32	-0.53
3,954.0	15.70	220.10	3,859.8	-573.5	-429.8	715.9	1.82	-1.81	-0.85
4,049.0	15.60	217.70	3,951.3	-593.4	-445.9	741.4	0.69	-0.11	-2.53
4,142.0	15.00	217.30	4,041.0	-612.9	-460.8	765.9	0.66	-0.65	-0.43
4,237.0	13.40	217.90	4,133.1	-631.3	-475.1	789.2	1.69	-1.68	0.63
4,331.0	11.40	216.30	4,224.9	-647.4	-487.2	809.3	2.16	-2.13	-1.70
4,426.0	10.10	215.80	4,318.2	-661.7	-497.7	827.1	1.37	-1.37	-0.53
4,519.0	8.50	217.50	4,410.0	-673.8	-506.6	842.1	1.75	-1.72	1.83
4,613.0	6.90	215.50	4,503.2	-683.9	-514.1	854.6	1.73	-1.70	-2.13
4,708.0	4.70	206.90	4,597.7	-692.0	-519.2	864.2	2.48	-2.32	-9.05
4,834.0	2.10	190.50	4,723.4	-698.9	-522.0	871.5	2.18	-2.06	-13.02
4,930.0	1.80	168.70	4,819.4	-702.1	-522.0	874.1	0.83	-0.31	-22.71
5,025.0	1.20	167.50	4,914.4	-704.6	-521.5	875.8	0.63	-0.63	-1.26
5,121.0	0.60	161.20	5,010.3	-706.0	-521.1	876.8	0.63	-0.63	-6.56
5,215.0	0.50	149.60	5,104.3	-706.8	-520.7	877.3	0.16	-0.11	-12.34
5,311.0	0.50	148.10	5,200.3	-707.6	-520.3	877.7	0.01	0.00	-1.56
5,406.0	0.50	88.50	5,295.3	-707.9	-519.7	877.6	0.52	0.00	-62.74
5,501.0	0.30	56.30	5,390.3	-707.7	-519.1	877.1	0.31	-0.21	-33.89
5,596.0	0.70	178.60	5,485.3	-708.2	-518.8	877.4	0.94	0.42	128.74
5,690.0	1.00	183.60	5,579.3	-709.6	-518.9	878.5	0.33	0.32	5.32
5,785.0	0.90	162.60	5,674.3	-711.1	-518.7	879.7	0.38	-0.11	-22.11
5,880.0	1.00	161.60	5,769.3	-712.6	-518.2	880.7	0.11	0.11	-1.05
5,974.0	1.20	149.90	5,863.3	-714.2	-517.5	881.6	0.32	0.21	-12.45
6,069.0	1.50	147.80	5,958.2	-716.2	-516.3	882.5	0.32	0.32	-2.21
6,163.0	1.80	144.60	6,052.2	-718.4	-514.8	883.5	0.33	0.32	-3.40
6,259.0	2.50	143.00	6,148.1	-721.3	-512.7	884.7	0.73	0.73	-1.67
6,354.0	1.60	175.00	6,243.1	-724.3	-511.3	886.4	1.50	-0.95	33.68
6,449.0	1.40	192.40	6,338.0	-726.7	-511.4	888.5	0.52	-0.21	18.32
6,543.0	1.70	179.80	6,432.0	-729.3	-511.7	890.8	0.48	0.32	-13.40
6,637.0	1.80	172.50	6,526.0	-732.1	-511.5	893.0	0.26	0.11	-7.77
6,730.0	2.10	168.10	6,618.9	-735.2	-510.9	895.3	0.36	0.32	-4.73



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Bauer Debus 22AD
Project:	SEC.22-T5N-R64W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Bauer Debus 22AD Pad Sec.22-T5N-R64W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Well:	Bauer Debus 22AD	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)
6,826.0	2.90	162.60	6,714.8	-739.3	-509.8	898.0	0.87	0.83	-5.73
6,921.0	2.50	160.40	6,809.7	-743.5	-508.4	900.7	0.43	-0.42	-2.32
6,962.0	2.00	157.60	6,850.7	-745.0	-507.9	901.6	1.25	-1.22	-6.83
7,005.0	2.00	157.60	6,893.7	-746.4	-507.3	902.5	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------