

Well Name: **Binder 22-10DU**

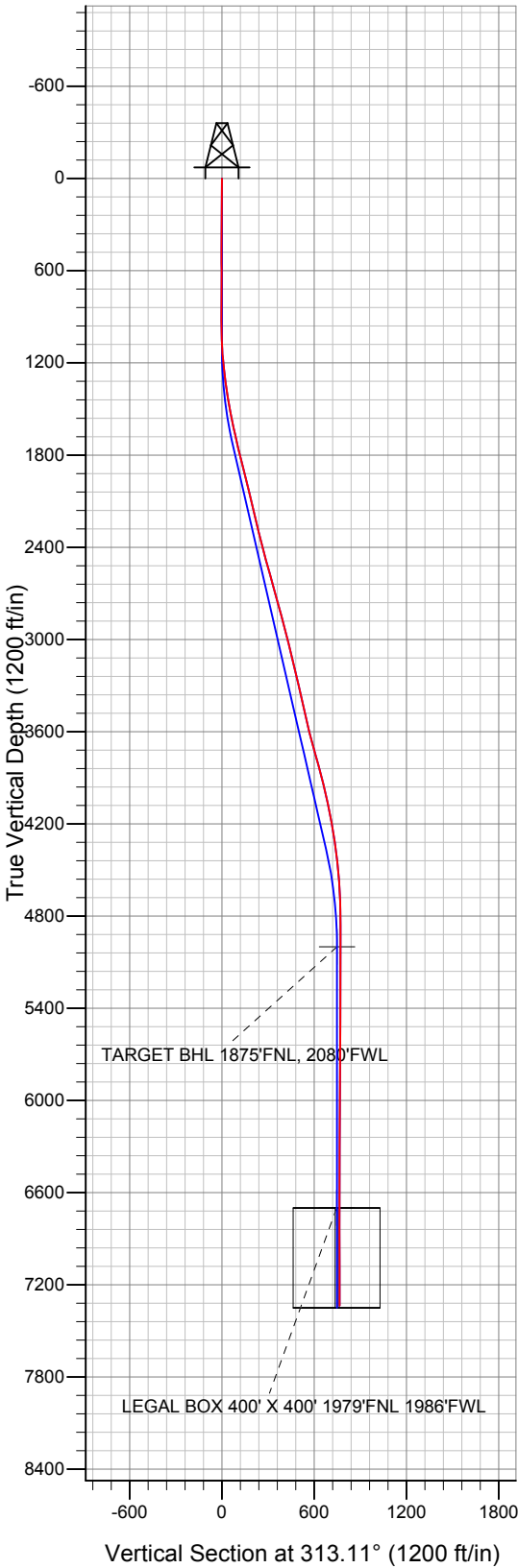
Surface Location: Binder 10-NDU Pad Sec.10-T4N-R67W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4780.0

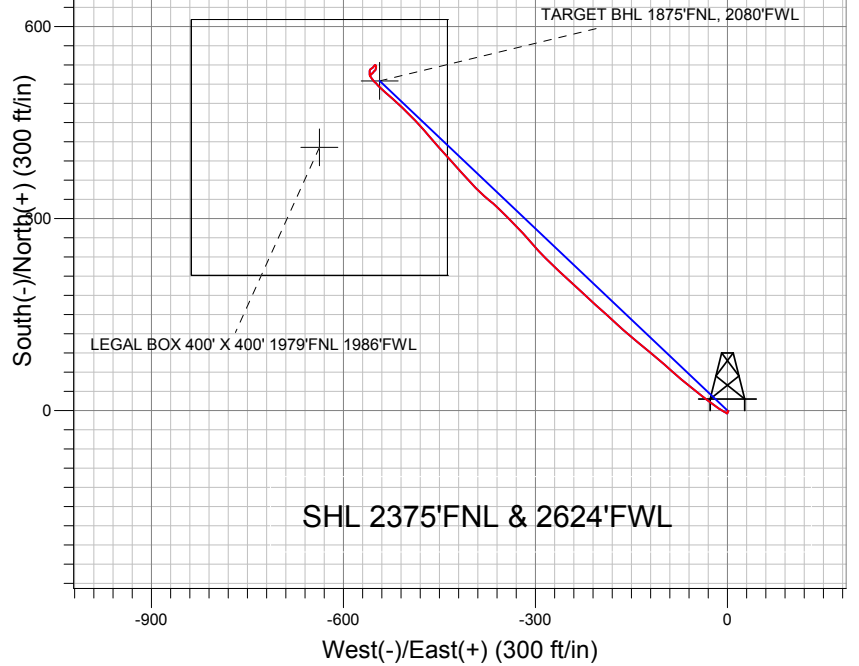
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1362795.29	3173642.85	40° 19' 39.360 N	104° 52' 37.884 W
		Original Well Elev WELL @ 4793.0ft (Original Well Elev)			

Slot

PETROLEUM DEVELOPMENT CORP Weld County CO



Projected BHL 523'N & 559'W of surface 1867'FNL & 2065'FWL



LEGEND

- ▲ Binder 22-10DU, Wellbore #1, Plan #2 (9-23-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7425'MD & 7337'TVD @765' VS
 0.8 deg Inc 225.3 deg AZ

Project: SEC.10-T4N-R67W
 Site: Binder 10-NDU Pad Sec.10-T4N-R67W
 Well: Binder 22-10DU
 Plan: Wellbore #1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

Binder 10-NDU Pad Sec.10-T4N-R67W

Binder 22-10DU

Wellbore #1

Survey: Survey #1

Standard Survey Report

07 December, 2010



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Binder 22-10DU
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4793.0ft (Original Well Elev)
Site:	Binder 10-NDU Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4793.0ft (Original Well Elev)
Well:	Binder 22-10DU	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.10-T4N-R67W, 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	Binder 10-NDU Pad Sec.10-T4N-R67W				
Site Position:		Northing:	1,362,813.51 ft	Latitude:	40° 19' 39.540 N
From:	Lat/Long	Easting:	3,173,642.72 ft	Longitude:	104° 52' 37.884 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.40 °

Well	Binder 22-10DU					
Well Position	+N/-S	0.0 ft	Northing:	1,362,795.29 ft	Latitude:	40° 19' 39.360 N
	+E/-W	0.0 ft	Easting:	3,173,642.85 ft	Longitude:	104° 52' 37.884 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,780.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/24/2010	9.02	67.00	53,158

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	313.11	

Survey Program	Date	12/7/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
457.0	7,425.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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
457.0	0.40	128.70	457.0	-1.0	1.2	-1.6	0.09	0.09	0.00
551.0	1.50	236.00	551.0	-1.9	0.5	-1.6	1.77	1.17	114.15
644.0	0.40	118.50	644.0	-2.7	-0.2	-1.7	1.85	-1.18	-126.34
738.0	0.50	174.80	738.0	-3.3	0.1	-2.3	0.46	0.11	59.89
831.0	0.50	204.60	831.0	-4.1	0.0	-2.7	0.28	0.00	32.04
925.0	0.40	247.00	925.0	-4.6	-0.5	-2.7	0.36	-0.11	45.11
1,019.0	1.40	312.40	1,019.0	-3.9	-1.7	-1.5	1.37	1.06	69.57
1,112.0	3.50	296.00	1,111.9	-1.9	-5.1	2.4	2.36	2.26	-17.63
1,206.0	5.80	304.30	1,205.6	2.0	-11.6	9.8	2.54	2.45	8.83
1,299.0	8.10	305.00	1,297.9	8.4	-20.8	21.0	2.47	2.47	0.75
1,392.0	8.10	306.60	1,389.9	16.1	-31.4	34.0	0.24	0.00	1.72

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Binder 22-10DU
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Site:	Binder 10-NDU Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4793.0ft (Original Well Elev)
Well:	Binder 22-10DU	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)
1,486.0	10.00	309.10	1,482.8	25.2	-43.1	48.7	2.06	2.02	2.66
1,580.0	11.70	308.70	1,575.1	36.3	-56.9	66.3	1.81	1.81	-0.43
1,673.0	13.00	309.50	1,665.9	48.9	-72.3	86.2	1.41	1.40	0.86
1,767.0	13.20	312.30	1,757.5	62.8	-88.4	107.4	0.71	0.21	2.98
1,860.0	14.00	310.80	1,847.9	77.3	-104.8	129.3	0.94	0.86	-1.61
1,954.0	14.20	310.90	1,939.0	92.3	-122.1	152.2	0.21	0.21	0.11
2,047.0	13.90	308.50	2,029.3	106.7	-139.5	174.7	0.70	-0.32	-2.58
2,141.0	13.00	308.40	2,120.7	120.3	-156.6	196.5	0.96	-0.96	-0.11
2,235.0	13.50	315.00	2,212.2	134.6	-172.6	218.0	1.69	0.53	7.02
2,328.0	14.00	311.60	2,302.5	149.8	-188.7	240.1	1.02	0.54	-3.66
2,422.0	14.40	311.30	2,393.6	165.0	-206.0	263.2	0.43	0.43	-0.32
2,515.0	15.40	313.50	2,483.5	181.2	-223.6	287.1	1.24	1.08	2.37
2,609.0	15.30	312.90	2,574.2	198.2	-241.8	312.0	0.20	-0.11	-0.64
2,702.0	15.50	312.80	2,663.8	215.0	-259.9	336.6	0.22	0.22	-0.11
2,796.0	14.70	313.50	2,754.6	231.7	-277.7	361.1	0.87	-0.85	0.74
2,890.0	15.80	318.40	2,845.3	249.5	-294.9	385.8	1.80	1.17	5.21
2,983.0	15.20	318.10	2,934.9	268.1	-311.4	410.6	0.65	-0.65	-0.32
3,077.0	14.20	316.00	3,025.8	285.5	-327.7	434.4	1.21	-1.06	-2.23
3,170.0	13.20	315.20	3,116.2	301.3	-343.1	456.4	1.09	-1.08	-0.86
3,264.0	13.20	313.90	3,207.7	316.3	-358.4	477.8	0.32	0.00	-1.38
3,357.0	12.80	309.00	3,298.3	330.2	-374.0	498.7	1.26	-0.43	-5.27
3,451.0	12.90	314.90	3,389.9	344.1	-389.6	519.6	1.40	0.11	6.28
3,544.0	13.00	317.80	3,480.6	359.2	-404.0	540.4	0.71	0.11	3.12
3,638.0	13.10	317.80	3,572.2	374.9	-418.2	561.5	0.11	0.11	0.00
3,731.0	15.80	318.10	3,662.2	392.2	-433.7	584.7	2.90	2.90	0.32
3,825.0	15.60	318.70	3,752.7	411.2	-450.6	610.0	0.27	-0.21	0.64
3,918.0	15.50	318.50	3,842.3	429.9	-467.1	634.8	0.12	-0.11	-0.22
4,012.0	14.20	318.20	3,933.2	447.9	-483.1	658.8	1.39	-1.38	-0.32
4,106.0	11.80	314.50	4,024.7	463.2	-497.7	679.9	2.70	-2.55	-3.94
4,199.0	10.90	312.60	4,115.9	475.8	-510.9	698.2	1.05	-0.97	-2.04
4,293.0	9.80	312.10	4,208.4	487.2	-523.4	715.1	1.17	-1.17	-0.53
4,386.0	8.60	311.10	4,300.2	497.1	-534.5	729.9	1.30	-1.29	-1.08
4,480.0	8.70	315.50	4,393.1	506.8	-544.8	744.1	0.71	0.11	4.68
4,574.0	5.40	318.60	4,486.4	515.2	-552.7	755.6	3.53	-3.51	3.30
4,667.0	4.10	328.60	4,579.1	521.3	-557.3	763.1	1.65	-1.40	10.75
4,760.0	3.00	358.20	4,671.9	526.6	-559.1	768.1	2.26	-1.18	31.83
4,854.0	2.30	10.10	4,765.8	530.9	-558.9	770.8	0.94	-0.74	12.66
4,948.0	1.50	52.30	4,859.8	533.5	-557.6	771.7	1.66	-0.85	44.89
5,041.0	1.10	54.80	4,952.7	534.8	-555.9	771.3	0.43	-0.43	2.69
5,088.2	1.00	55.71	5,000.0	535.2	-555.2	771.1	0.22	-0.21	1.92
TARGET BHL 1875'FNL, 2080'FWL									
5,135.0	0.90	56.80	5,046.7	535.7	-554.5	770.9	0.22	-0.21	2.34
5,228.0	0.70	36.80	5,139.7	536.5	-553.6	770.8	0.37	-0.22	-21.51
5,322.0	0.60	38.60	5,233.7	537.4	-552.9	770.9	0.11	-0.11	1.91
5,415.0	0.50	41.20	5,326.7	538.1	-552.4	771.0	0.11	-0.11	2.80
5,509.0	0.60	41.20	5,420.7	538.7	-551.8	771.0	0.11	0.11	0.00
5,603.0	1.10	41.20	5,514.7	539.8	-550.9	771.0	0.53	0.53	0.00
5,696.0	0.60	154.50	5,607.7	540.0	-550.1	770.6	1.56	-0.54	121.83
5,789.0	0.60	154.50	5,700.7	539.1	-549.6	769.7	0.00	0.00	0.00
5,883.0	0.40	146.50	5,794.7	538.4	-549.2	768.9	0.22	-0.21	-8.51
5,977.0	0.60	178.00	5,888.7	537.7	-549.0	768.3	0.35	0.21	33.51
6,070.0	0.80	177.20	5,981.7	536.5	-549.0	767.5	0.22	0.22	-0.86
6,164.0	0.80	195.90	6,075.7	535.2	-549.1	766.7	0.28	0.00	19.89

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6,257.0	0.70	193.50	6,168.6	534.1	-549.5	766.1	0.11	-0.11	-2.58
6,351.0	0.60	192.60	6,262.6	533.0	-549.7	765.6	0.11	-0.11	-0.96
6,446.0	0.70	218.30	6,357.6	532.1	-550.2	765.3	0.32	0.11	27.05
6,538.0	0.80	228.50	6,449.6	531.2	-551.0	765.3	0.18	0.11	11.09
6,632.0	0.70	223.40	6,543.6	530.4	-551.9	765.3	0.13	-0.11	-5.43
6,724.0	0.70	215.30	6,635.6	529.5	-552.6	765.3	0.11	0.00	-8.80
6,790.0	0.63	218.58	6,701.6	528.9	-553.0	765.2	0.12	-0.11	4.97
LEGAL BOX 400' X 400' 1979'FNL 1986'FWL									
6,818.0	0.60	220.20	6,729.6	528.7	-553.2	765.2	0.12	-0.10	5.79
6,911.0	0.80	227.40	6,822.6	527.8	-554.0	765.2	0.23	0.22	7.74
7,005.0	0.80	230.10	6,916.6	527.0	-555.0	765.3	0.04	0.00	2.87
7,098.0	0.70	222.70	7,009.6	526.1	-555.9	765.4	0.15	-0.11	-7.96
7,192.0	0.70	224.00	7,103.6	525.3	-556.7	765.4	0.02	0.00	1.38
7,285.0	0.70	224.90	7,196.6	524.5	-557.5	765.4	0.01	0.00	0.97
7,379.0	0.80	225.30	7,290.6	523.6	-558.4	765.5	0.11	0.11	0.43
7,425.0	0.80	225.30	7,336.6	523.2	-558.8	765.5	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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