

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: Chesnut 27K-403

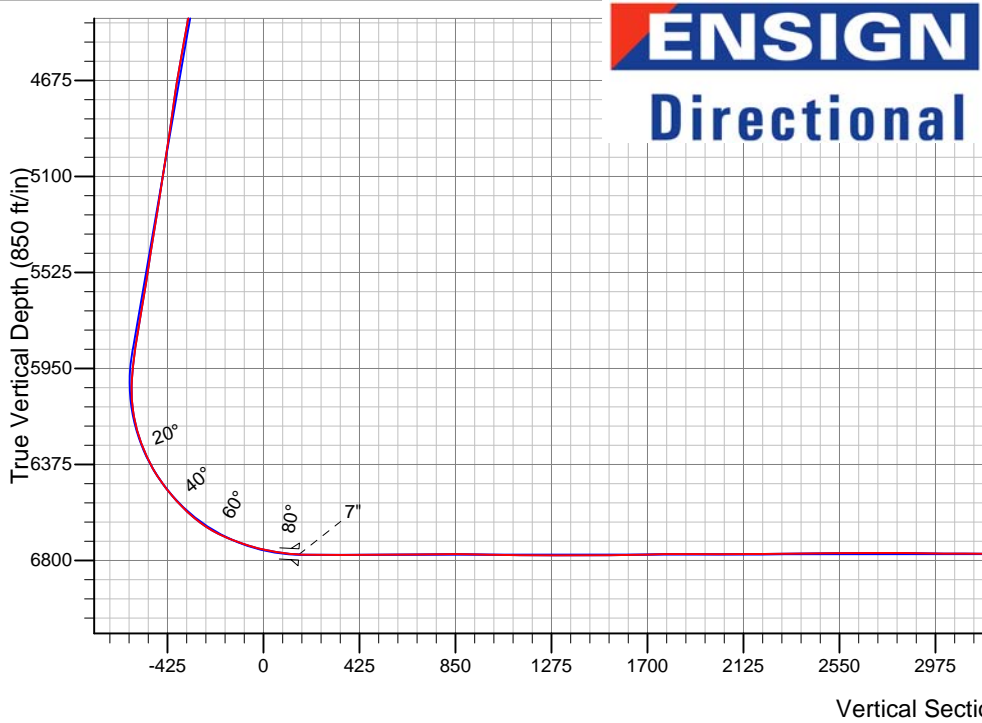
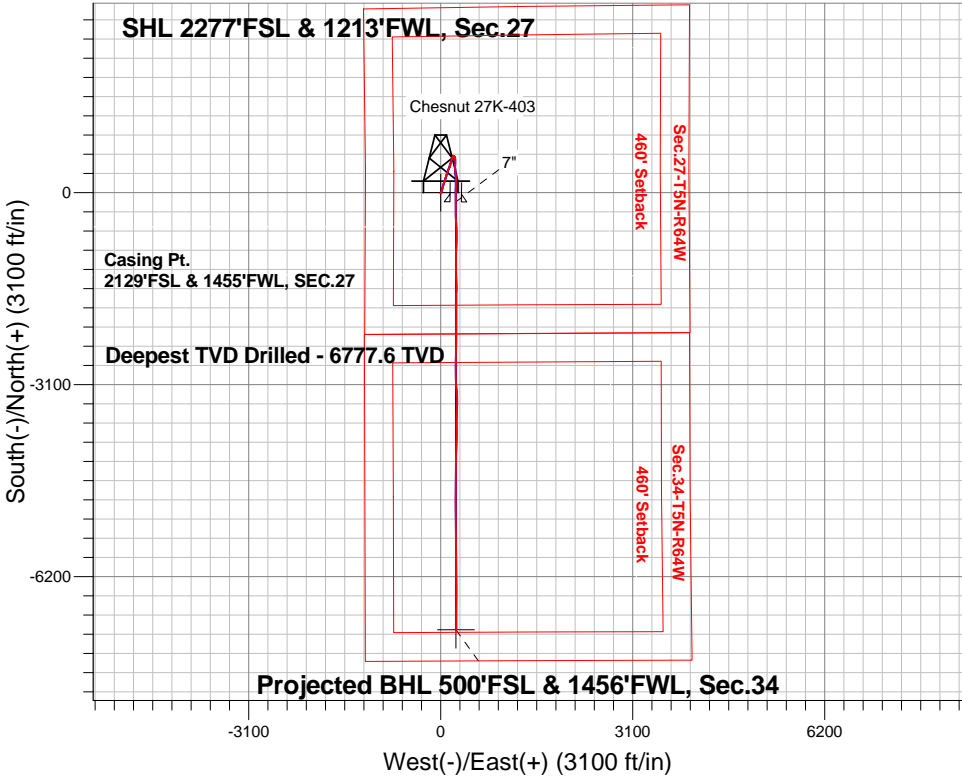
Surface Location: Chesnut 27K-HZ Pad Sec.27-T5N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4618.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1378821.98	3267260.11	40.369300	-104.540810	
Ensign 121 RKB - 13.5' WELL @ 4631.5ft (Ensign 121 RKB - 13.5')						

FINAL SURVEY

Projected Bottom Hole Location  
14160'MD 6765'TVD 7053'S & 251'E of SHL  
89.5 degree Incl @ 180.0 degree AZM



Chesnut 27K-HZ Pad Sec.27-T5N-R64W  
Chesnut 27K-403  
Wellbore #1

ANNOTATIONS

TVD	MD	Annotation
6777.6	8551.0	Deepest TVD Drilled

LEGEND

- Chesnut 27K-403, Wellbore #1, Plan #3 (2-18-15)R V0
- Wellbore #1
- Survey #1

BHL 500'FSL & 1456'FWL, Sec.34



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.27-T5N-R64W**

**Chesnut 27K-HZ Pad Sec.27-T5N-R64W**

**Chesnut 27K-403**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**02 March, 2015**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Well:</b>	Chesnut 27K-403	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.27-T5N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		Chesnut 27K-HZ Pad Sec.27-T5N-R64W			
Site Position:		Northing:	1,378,883.95 ft	Latitude:	40.369470
From:	Lat/Long	Easting:	3,267,262.23 ft	Longitude:	-104.540800
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well	Chesnut 27K-403					
Well Position	+N-S	0.0 ft	Northing:	1,378,821.98 ft	Latitude:	40.369300
	+E-W	0.0 ft	Easting:	3,267,260.11 ft	Longitude:	-104.540810
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,618.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2/18/2015	8.24	66.93	52,752

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	178.01	

<b>Survey Program</b>	<b>Date</b>	3/2/2015			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
165.0	14,160.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.00	6.80	1.0	0.0	0.0	0.0	0.18	0.18	0.00	
<b>SHL 2277'FSL &amp; 1213'FWL, Sec.27</b>										
165.0	0.30	6.80	165.0	0.4	0.1	-0.4	0.18	0.18	0.00	
260.0	0.30	309.20	260.0	0.8	-0.1	-0.8	0.30	0.00	-60.63	
355.0	0.10	114.40	355.0	1.0	-0.2	-1.0	0.42	-0.21	173.90	
451.0	0.20	351.90	451.0	1.1	-0.2	-1.1	0.28	0.10	-127.60	
546.0	0.90	190.20	546.0	0.5	-0.3	-0.5	1.15	0.74	-170.21	
641.0	1.00	207.40	641.0	-1.0	-0.8	0.9	0.32	0.11	18.11	
736.0	0.40	191.90	736.0	-2.0	-1.3	2.0	0.66	-0.63	-16.32	
832.0	0.20	221.60	832.0	-2.5	-1.5	2.4	0.26	-0.21	30.94	
885.0	0.60	168.40	885.0	-2.8	-1.5	2.8	0.96	0.75	-100.38	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Well:</b>	Chesnut 27K-403	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
1,022.0	0.60	237.50	1,022.0	-3.9	-1.9	3.8	0.50	0.00	50.44
1,117.0	0.40	208.10	1,117.0	-4.5	-2.5	4.4	0.34	-0.21	-30.95
1,212.0	0.40	207.60	1,212.0	-5.0	-2.8	4.9	0.00	0.00	-0.53
1,307.0	0.60	219.20	1,307.0	-5.7	-3.3	5.6	0.23	0.21	12.21
1,403.0	0.60	184.90	1,403.0	-6.6	-3.7	6.5	0.37	0.00	-35.73
1,498.0	0.80	165.70	1,497.9	-7.8	-3.5	7.6	0.32	0.21	-20.21
1,593.0	0.70	98.20	1,592.9	-8.5	-2.8	8.4	0.88	-0.11	-71.05
1,689.0	0.90	126.70	1,688.9	-9.0	-1.6	8.9	0.46	0.21	29.69
1,784.0	1.40	77.30	1,783.9	-9.2	0.1	9.2	1.12	0.53	-52.00
1,879.0	1.20	76.60	1,878.9	-8.7	2.2	8.8	0.21	-0.21	-0.74
1,974.0	1.10	51.50	1,973.9	-7.9	3.9	8.0	0.54	-0.11	-26.42
2,070.0	0.60	94.20	2,069.9	-7.4	5.1	7.6	0.81	-0.52	44.48
2,165.0	0.90	301.40	2,164.9	-7.0	5.0	7.2	1.54	0.32	-160.84
2,260.0	1.00	353.10	2,259.8	-5.8	4.2	6.0	0.88	0.11	54.42
2,356.0	2.80	18.60	2,355.8	-2.8	4.9	2.9	2.03	1.88	26.56
2,451.0	5.00	14.90	2,450.6	3.4	6.7	-3.2	2.33	2.32	-3.89
2,546.0	6.20	17.20	2,545.1	12.3	9.3	-12.0	1.28	1.26	2.42
2,641.0	7.80	22.30	2,639.4	23.2	13.2	-22.7	1.81	1.68	5.37
2,736.0	8.20	19.10	2,733.5	35.6	17.9	-34.9	0.63	0.42	-3.37
2,832.0	8.30	13.70	2,828.5	48.8	21.8	-48.0	0.81	0.10	-5.63
2,927.0	9.40	15.40	2,922.3	62.9	25.5	-62.0	1.19	1.16	1.79
3,024.0	9.40	11.90	3,018.0	78.3	29.2	-77.2	0.59	0.00	-3.61
3,118.0	9.70	13.30	3,110.7	93.5	32.6	-92.3	0.40	0.32	1.49
3,212.0	10.00	17.40	3,203.4	109.0	36.9	-107.7	0.81	0.32	4.36
3,306.0	9.80	17.00	3,296.0	124.5	41.7	-122.9	0.22	-0.21	-0.43
3,400.0	10.80	21.10	3,388.4	140.3	47.2	-138.6	1.32	1.06	4.36
3,494.0	11.40	15.10	3,480.7	157.5	52.8	-155.6	1.38	0.64	-6.38
3,588.0	12.00	15.60	3,572.7	175.9	57.8	-173.8	0.65	0.64	0.53
3,682.0	13.40	22.50	3,664.4	195.4	64.6	-193.0	2.19	1.49	7.34
3,777.0	13.40	19.50	3,756.9	215.9	72.5	-213.3	0.73	0.00	-3.16
3,871.0	11.30	13.90	3,848.7	235.1	78.3	-232.3	2.57	-2.23	-5.96
3,967.0	10.80	15.30	3,942.9	252.9	83.0	-249.9	0.59	-0.52	1.46
4,061.0	11.90	16.90	4,035.1	270.7	88.1	-267.5	1.22	1.17	1.70
4,157.0	11.00	12.80	4,129.1	289.1	93.0	-285.7	1.26	-0.94	-4.27
4,251.0	10.60	21.60	4,221.5	305.9	98.2	-302.3	1.80	-0.43	9.36
4,345.0	11.30	21.60	4,313.8	322.5	104.8	-318.7	0.74	0.74	0.00
4,440.0	10.50	21.10	4,407.1	339.2	111.3	-335.1	0.85	-0.84	-0.53
4,534.0	10.60	12.80	4,499.5	355.6	116.3	-351.4	1.62	0.11	-8.83
4,629.0	11.10	19.50	4,592.8	372.8	121.3	-368.3	1.43	0.53	7.05
4,724.0	10.50	33.20	4,686.1	388.6	129.1	-383.9	2.77	-0.63	14.42
4,819.0	9.00	31.30	4,779.7	402.2	137.7	-397.2	1.61	-1.58	-2.00
4,913.0	9.80	20.90	4,872.5	416.0	144.4	-410.7	1.99	0.85	-11.06
5,008.0	9.40	14.90	4,966.2	431.0	149.2	-425.6	1.13	-0.42	-6.32
5,102.0	8.50	11.60	5,059.0	445.3	152.6	-439.7	1.10	-0.96	-3.51
5,196.0	9.00	15.40	5,151.9	459.2	156.0	-453.5	0.81	0.53	4.04
5,291.0	9.80	14.20	5,245.6	474.2	159.9	-468.3	0.87	0.84	-1.26
5,385.0	10.00	14.20	5,338.2	489.8	163.9	-483.8	0.21	0.21	0.00
5,480.0	8.80	11.20	5,432.0	505.0	167.3	-498.8	1.36	-1.26	-3.16
5,575.0	9.30	18.60	5,525.8	519.4	171.2	-513.1	1.33	0.53	7.79
5,669.0	10.30	13.50	5,618.4	534.7	175.6	-528.3	1.41	1.06	-5.43
5,764.0	10.20	20.00	5,711.9	550.9	180.4	-544.3	1.22	-0.11	6.84
5,859.0	9.30	19.50	5,805.5	566.0	185.9	-559.2	0.95	-0.95	-0.53
5,906.0	8.40	16.50	5,852.0	572.9	188.1	-566.0	2.15	-1.91	-6.38
5,954.0	9.10	19.50	5,899.4	579.9	190.4	-572.9	1.74	1.46	6.25

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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
6,001.0	8.40	40.90	5,945.9	586.0	193.9	-578.9	7.04	-1.49	45.53
6,048.0	7.60	61.00	5,992.4	590.1	198.8	-582.8	6.15	-1.70	42.77
6,095.0	8.70	88.20	6,039.0	591.7	205.1	-584.2	8.44	2.34	57.87
6,143.0	9.40	111.40	6,086.4	590.4	212.4	-582.6	7.69	1.46	48.33
6,190.0	10.00	134.30	6,132.7	586.1	218.9	-578.1	8.25	1.28	48.72
6,238.0	12.80	152.60	6,179.8	578.5	224.3	-570.3	9.46	5.83	38.13
6,285.0	16.20	161.90	6,225.3	567.6	228.7	-559.3	8.75	7.23	19.79
6,332.0	20.00	168.70	6,270.0	553.5	232.4	-545.1	9.24	8.09	14.47
6,379.0	22.70	176.30	6,313.7	536.6	234.5	-528.1	8.21	5.74	16.17
6,427.0	25.60	181.00	6,357.5	516.9	234.9	-508.5	7.24	6.04	9.79
6,474.0	29.90	180.90	6,399.1	495.1	234.6	-486.6	9.15	9.15	-0.21
6,522.0	34.70	181.40	6,439.7	469.4	234.0	-461.0	10.02	10.00	1.04
6,569.0	37.80	181.90	6,477.6	441.6	233.2	-433.3	6.63	6.60	1.06
6,616.0	39.90	178.90	6,514.2	412.2	233.1	-403.8	6.00	4.47	-6.38
6,663.0	43.10	176.60	6,549.4	381.1	234.3	-372.7	7.54	6.81	-4.89
6,710.0	46.90	175.60	6,582.6	347.9	236.6	-339.5	8.22	8.09	-2.13
6,757.0	50.80	175.10	6,613.5	312.6	239.4	-304.1	8.34	8.30	-1.06
6,805.0	54.70	175.90	6,642.6	274.6	242.4	-266.0	8.23	8.13	1.67
6,852.0	60.00	178.00	6,667.9	235.1	244.5	-226.4	11.89	11.28	4.47
6,900.0	65.50	180.30	6,689.9	192.4	245.1	-183.8	12.22	11.46	4.79
6,947.0	69.30	181.20	6,708.0	149.0	244.6	-140.4	8.28	8.09	1.91
6,995.0	70.30	180.90	6,724.5	104.0	243.7	-95.5	2.16	2.08	-0.63
7,042.0	74.00	181.40	6,739.0	59.3	242.8	-50.8	7.94	7.87	1.06
7,090.0	77.70	180.70	6,750.7	12.8	242.0	-4.3	7.84	7.71	-1.46
7,137.0	79.60	179.50	6,759.9	-33.3	241.9	41.7	4.75	4.04	-2.55
7,184.0	82.40	179.30	6,767.3	-79.7	242.4	88.1	5.97	5.96	-0.43
7,227.0	85.70	180.50	6,771.7	-122.5	242.5	130.9	8.16	7.67	2.79
7,253.0	87.14	180.64	6,773.4	-148.5	242.2	156.8	5.55	5.53	0.53
7"									
7,303.0	89.90	180.90	6,774.7	-198.4	241.5	206.7	5.55	5.53	0.53
7,335.0	90.00	180.70	6,774.7	-230.4	241.1	238.7	0.70	0.31	-0.63
7,429.0	89.70	178.70	6,774.9	-324.4	241.6	332.6	2.15	-0.32	-2.13
7,524.0	90.00	177.20	6,775.2	-419.4	245.0	427.6	1.61	0.32	-1.58
7,619.0	90.10	177.30	6,775.1	-514.2	249.5	522.6	0.15	0.11	0.11
7,713.0	90.70	177.90	6,774.4	-608.2	253.5	616.6	0.90	0.64	0.64
7,808.0	90.90	181.20	6,773.1	-703.1	254.2	711.5	3.48	0.21	3.47
7,902.0	90.50	180.70	6,772.0	-797.1	252.7	805.4	0.68	-0.43	-0.53
7,997.0	88.70	181.40	6,772.6	-892.1	250.9	900.3	2.03	-1.89	0.74
8,092.0	89.10	180.90	6,774.5	-987.1	249.0	995.1	0.67	0.42	-0.53
8,185.0	88.50	180.20	6,776.4	-1,080.0	248.1	1,088.0	0.99	-0.65	-0.75
8,277.0	90.20	180.30	6,777.4	-1,172.0	247.7	1,179.9	1.85	1.85	0.11
8,367.0	90.30	179.60	6,777.1	-1,262.0	247.8	1,269.9	0.79	0.11	-0.78
8,460.0	89.50	178.40	6,777.2	-1,355.0	249.4	1,362.8	1.55	-0.86	-1.29
8,551.0	90.00	178.40	6,777.6	-1,446.0	252.0	1,453.8	0.55	0.55	0.00
Deepest TVD Drilled									
8,643.0	91.10	181.00	6,776.7	-1,537.9	252.4	1,545.8	3.07	1.20	2.83
8,734.0	91.40	180.20	6,774.7	-1,628.9	251.5	1,636.7	0.94	0.33	-0.88
8,825.0	91.00	180.50	6,772.8	-1,719.9	250.9	1,727.6	0.55	-0.44	0.33
8,917.0	90.00	179.60	6,772.0	-1,811.9	250.8	1,819.5	1.46	-1.09	-0.98
9,008.0	90.00	179.60	6,772.0	-1,902.9	251.5	1,910.5	0.00	0.00	0.00
9,099.0	89.20	179.80	6,772.7	-1,993.9	252.0	2,001.4	0.91	-0.88	0.22
9,189.0	91.10	179.80	6,772.4	-2,083.9	252.3	2,091.4	2.11	2.11	0.00
9,281.0	90.90	181.00	6,770.8	-2,175.9	251.6	2,183.3	1.32	-0.22	1.30

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<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
9,371.0	90.40	180.50	6,769.8	-2,265.8	250.5	2,273.2	0.79	-0.56	-0.56
9,462.0	90.40	180.50	6,769.2	-2,356.8	249.7	2,364.1	0.00	0.00	0.00
9,554.0	89.90	180.70	6,768.9	-2,448.8	248.7	2,456.0	0.59	-0.54	0.22
9,645.0	90.50	181.60	6,768.6	-2,539.8	246.9	2,546.9	1.19	0.66	0.99
9,736.0	90.60	181.40	6,767.7	-2,630.8	244.5	2,637.7	0.25	0.11	-0.22
9,827.0	90.70	180.70	6,766.7	-2,721.8	242.8	2,728.6	0.78	0.11	-0.77
9,919.0	88.90	179.30	6,767.0	-2,813.8	242.8	2,820.5	2.48	-1.96	-1.52
10,014.0	89.30	179.60	6,768.5	-2,908.7	243.7	2,915.4	0.53	0.42	0.32
10,109.0	90.00	179.50	6,769.1	-3,003.7	244.5	3,010.4	0.74	0.74	-0.11
10,204.0	89.70	176.10	6,769.3	-3,098.6	248.1	3,105.4	3.59	-0.32	-3.58
10,299.0	89.40	174.50	6,770.1	-3,193.3	255.9	3,200.3	1.71	-0.32	-1.68
10,394.0	90.90	177.20	6,769.8	-3,288.1	262.8	3,295.2	3.25	1.58	2.84
10,488.0	90.60	179.30	6,768.6	-3,382.0	265.7	3,389.2	2.26	-0.32	2.23
10,583.0	90.10	184.20	6,768.0	-3,476.9	262.8	3,484.0	5.18	-0.53	5.16
10,679.0	90.30	181.70	6,767.7	-3,572.8	257.8	3,579.6	2.61	0.21	-2.60
10,774.0	90.80	181.40	6,766.8	-3,667.8	255.2	3,674.4	0.61	0.53	-0.32
10,869.0	90.30	178.90	6,765.9	-3,762.7	255.0	3,769.3	2.68	-0.53	-2.63
10,964.0	90.50	179.80	6,765.2	-3,857.7	256.1	3,864.3	0.97	0.21	0.95
11,059.0	90.70	181.40	6,764.2	-3,952.7	255.1	3,959.2	1.70	0.21	1.68
11,154.0	88.90	180.90	6,764.6	-4,047.7	253.2	4,054.0	1.97	-1.89	-0.53
11,249.0	88.90	180.70	6,766.4	-4,142.7	251.8	4,148.9	0.21	0.00	-0.21
11,344.0	89.50	181.00	6,767.7	-4,237.6	250.4	4,243.8	0.71	0.63	0.32
11,439.0	91.40	181.40	6,767.0	-4,332.6	248.4	4,338.6	2.04	2.00	0.42
11,534.0	89.90	181.70	6,765.9	-4,427.6	245.9	4,433.4	1.61	-1.58	0.32
11,630.0	90.80	182.10	6,765.3	-4,523.5	242.7	4,529.2	1.03	0.94	0.42
11,724.0	90.10	180.30	6,764.6	-4,617.5	240.7	4,623.1	2.05	-0.74	-1.91
11,819.0	89.60	179.80	6,764.8	-4,712.5	240.6	4,718.0	0.74	-0.53	-0.53
11,914.0	90.00	179.30	6,765.1	-4,807.5	241.4	4,813.0	0.67	0.42	-0.53
12,009.0	89.80	178.90	6,765.3	-4,902.5	242.9	4,908.0	0.47	-0.21	-0.42
12,104.0	91.10	180.30	6,764.6	-4,997.5	243.5	5,002.9	2.01	1.37	1.47
12,199.0	90.00	181.20	6,763.6	-5,092.4	242.3	5,097.8	1.50	-1.16	0.95
12,294.0	89.80	181.40	6,763.8	-5,187.4	240.1	5,192.6	0.30	-0.21	0.21
12,389.0	89.80	179.60	6,764.1	-5,282.4	239.3	5,287.5	1.89	0.00	-1.89
12,484.0	89.00	178.60	6,765.1	-5,377.4	240.8	5,382.5	1.35	-0.84	-1.05
12,579.0	89.30	177.90	6,766.5	-5,472.3	243.7	5,477.5	0.80	0.32	-0.74
12,674.0	89.70	179.60	6,767.4	-5,567.3	245.8	5,572.5	1.84	0.42	1.79
12,768.0	90.10	179.80	6,767.5	-5,661.3	246.3	5,666.4	0.48	0.43	0.21
12,863.0	90.90	180.30	6,766.7	-5,756.3	246.2	5,761.4	0.99	0.84	0.53
12,957.0	91.60	180.50	6,764.7	-5,850.3	245.5	5,855.3	0.77	0.74	0.21
13,052.0	90.60	179.80	6,762.8	-5,945.3	245.3	5,950.2	1.28	-1.05	-0.74
13,146.0	90.40	178.90	6,762.0	-6,039.2	246.4	6,044.2	0.98	-0.21	-0.96
13,242.0	90.70	178.60	6,761.1	-6,135.2	248.4	6,140.1	0.44	0.31	-0.31
13,336.0	90.00	178.60	6,760.5	-6,229.2	250.7	6,234.1	0.74	-0.74	0.00
13,429.0	90.70	178.60	6,759.9	-6,322.2	253.0	6,327.1	0.75	0.75	0.00
13,525.0	89.40	180.00	6,759.9	-6,418.1	254.2	6,423.1	1.99	-1.35	1.46
13,618.0	90.00	179.80	6,760.4	-6,511.1	254.3	6,516.1	0.68	0.65	-0.22
13,713.0	89.00	181.20	6,761.2	-6,606.1	253.5	6,611.0	1.81	-1.05	1.47
13,808.0	89.30	180.50	6,762.6	-6,701.1	252.1	6,705.8	0.80	0.32	-0.74
13,903.0	89.50	180.20	6,763.6	-6,796.1	251.5	6,800.7	0.38	0.21	-0.32
13,997.0	89.70	180.30	6,764.2	-6,890.1	251.1	6,894.7	0.24	0.21	0.11
14,105.0	89.50	180.00	6,765.0	-6,988.1	250.8	7,002.6	0.33	-0.19	-0.28
14,160.0	89.50	180.00	6,765.5	-7,053.1	250.8	7,057.5	0.00	0.00	0.00
BHL 500'FSL & 1450'FWL, Sec.34									

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Chesnut 27K-403
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Site:</b>	Chesnut 27K-HZ Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4631.5ft (Ensign 121 RKB - 13.5')
<b>Well:</b>	Chesnut 27K-403	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")
7,253.0	6,773.4	7"		7	7-1/2

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
8,551.0	6,777.6	-1,446.0	252.0	Deepest TVD Drilled	

Checked By: _____	Approved By: _____	Date: _____
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