



Petroleum Development Corp.

Mesa

NWNW Sec 24-T6S-R97W

Puckett 21C-24D

STK #1

Survey: Survey #1

Standard Survey Report

02 November, 2010



Company:	Petroleum Development Corp.	Local Co-ordinate Reference:	Well Puckett 21C-24D
Project:	Mesa	TVD Reference:	Puckett 21C-24D KBE @ 8399.0ft (Original Well Elev)
Site:	NWNW Sec 24-T6S-R97W	MD Reference:	Puckett 21C-24D KBE @ 8399.0ft (Original Well Elev)
Well:	Puckett 21C-24D	North Reference:	True
Wellbore:	STK #1	Survey Calculation Method:	Minimum Curvature
Design:	STK #1	Database:	Local

Project	Mesa		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	NWNW Sec 24-T6S-R97W				
Site Position:			Northing:		
From:	Lat/Long		Easting:	Latitude:	
Position Uncertainty:	0.0	ft	Slot Radius:	Longitude:	
				Grid Convergence:	1.00

Well	Puckett 21C-24D					
Well Position	+N/-S	0.0 ft	Northing:	1,622,916.91 ft	Latitude:	39.513209
	+E/-W	0.0 ft	Easting:	2,245,691.81 ft	Longitude:	-108.173992
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,381.0 ft

Wellbore	STK #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010-14	10/22/10	10.52	65.74	52,282

Design	STK #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	4,187.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	76.90	

Survey Program		Date	11/02/10		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
149.0	2,546.0	Surface (DD)	MWD	Geolink MWD	
2,681.0	4,187.0	Production (DD)	MWD	Geolink MWD	
4,246.0	9,310.0	Survey #1 (STK #1)	MWD	Geolink MWD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,187.0	9.70	76.30	4,153.1	-4,245.9	94.9	490.5	499.2	0.00	0.00	0.00
4,246.0	9.30	78.60	4,211.3	-4,187.7	97.1	500.0	509.0	0.93	-0.68	3.90
4,341.0	9.30	75.10	4,305.1	-4,093.9	100.5	514.9	524.3	0.60	0.00	-3.68
4,435.0	8.60	65.70	4,397.9	-4,001.1	105.4	528.7	538.8	1.72	-0.74	-10.00
4,529.0	9.40	60.90	4,490.8	-3,908.2	112.0	541.8	553.1	1.17	0.85	-5.11
4,624.0	9.00	61.30	4,584.6	-3,814.5	119.4	555.1	567.7	0.43	-0.42	0.42
4,718.0	8.20	58.80	4,677.5	-3,721.5	126.4	567.3	581.1	0.94	-0.85	-2.66

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Well:	Puckett 21C-24D	North Reference:	True
Wellbore:	STK #1	Survey Calculation Method:	Minimum Curvature
Design:	STK #1	Database:	Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,812.0	8.10	68.40	4,770.6	-3,628.5	132.3	579.1	594.1	1.45	-0.11	10.21
4,906.0	8.70	75.40	4,863.5	-3,535.5	136.5	592.2	607.7	1.26	0.64	7.45
5,001.0	7.80	76.70	4,957.6	-3,441.5	139.8	605.4	621.3	0.97	-0.95	1.37
5,095.0	7.20	67.10	5,050.8	-3,348.3	143.6	617.0	633.5	1.48	-0.64	-10.21
5,190.0	8.20	67.20	5,144.9	-3,254.1	148.5	628.8	646.1	1.05	1.05	0.11
5,284.0	8.50	82.40	5,237.9	-3,161.1	152.0	641.8	659.6	2.36	0.32	16.17
5,378.0	8.10	79.80	5,330.9	-3,068.1	154.1	655.2	673.1	0.58	-0.43	-2.77
5,473.0	7.90	79.20	5,425.0	-2,974.0	156.5	668.2	686.3	0.23	-0.21	-0.63
5,567.0	8.90	88.90	5,518.0	-2,881.0	157.9	681.9	699.9	1.84	1.06	10.32
5,661.0	8.70	89.50	5,610.9	-2,788.1	158.1	696.2	713.9	0.23	-0.21	0.64
5,756.0	8.30	91.30	5,704.9	-2,694.2	158.0	710.3	727.6	0.51	-0.42	1.89
5,850.0	7.60	91.30	5,798.0	-2,601.1	157.7	723.3	740.2	0.74	-0.74	0.00
5,944.0	7.70	90.10	5,891.1	-2,507.9	157.5	735.8	752.3	0.20	0.11	-1.28
6,038.0	6.80	89.30	5,984.4	-2,414.7	157.6	747.7	763.9	0.96	-0.96	-0.85
6,133.0	7.30	87.60	6,078.6	-2,320.4	157.9	759.3	775.3	0.57	0.53	-1.79
6,227.0	6.80	85.10	6,171.9	-2,227.1	158.6	770.8	786.7	0.62	-0.53	-2.66
6,321.0	5.90	84.70	6,265.4	-2,133.7	159.6	781.2	797.0	0.96	-0.96	-0.43
6,416.0	7.30	89.20	6,359.7	-2,039.3	160.1	792.1	807.7	1.57	1.47	4.74
6,510.0	6.80	86.30	6,453.0	-1,946.0	160.5	803.6	819.1	0.65	-0.53	-3.09
6,604.0	5.90	88.20	6,546.4	-1,852.6	161.0	814.0	829.3	0.98	-0.96	2.02
6,698.0	5.30	88.10	6,640.0	-1,759.0	161.3	823.1	838.3	0.64	-0.64	-0.11
6,793.0	4.50	95.20	6,734.6	-1,664.4	161.1	831.2	846.1	1.06	-0.84	7.47
6,887.0	3.90	92.60	6,828.4	-1,570.6	160.7	838.1	852.7	0.67	-0.64	-2.77
6,981.0	3.30	91.30	6,922.2	-1,476.8	160.5	844.0	858.4	0.64	-0.64	-1.38
7,076.0	2.60	96.60	7,017.1	-1,381.9	160.1	848.9	863.1	0.79	-0.74	5.58
7,170.0	2.20	99.30	7,111.0	-1,288.0	159.6	852.8	866.8	0.44	-0.43	2.87
7,266.0	2.00	94.00	7,206.9	-1,192.1	159.2	856.3	870.1	0.29	-0.21	-5.52
7,358.0	1.90	94.10	7,298.9	-1,100.1	159.0	859.4	873.1	0.11	-0.11	0.11
7,453.0	1.60	104.20	7,393.8	-1,005.2	158.5	862.2	875.7	0.45	-0.32	10.63
7,547.0	1.30	115.90	7,487.8	-911.2	157.8	864.5	877.7	0.45	-0.32	12.45
7,641.0	0.80	123.80	7,581.8	-817.2	156.9	866.0	879.0	0.55	-0.53	8.40
7,736.0	0.80	122.40	7,676.8	-722.2	156.2	867.1	879.9	0.02	0.00	-1.47
7,830.0	0.20	182.50	7,770.8	-628.2	155.7	867.6	880.4	0.77	-0.64	63.94
7,925.0	0.90	233.70	7,865.8	-533.3	155.1	867.0	879.6	0.83	0.74	53.89
8,019.0	1.50	242.50	7,959.7	-439.3	154.1	865.3	877.8	0.67	0.64	9.36
8,113.0	1.70	239.90	8,053.7	-345.3	152.8	863.1	875.2	0.23	0.21	-2.77
8,208.0	1.90	251.20	8,148.7	-250.4	151.6	860.3	872.3	0.43	0.21	11.89
8,302.0	2.10	243.80	8,242.6	-156.4	150.3	857.3	869.1	0.35	0.21	-7.87
8,396.0	2.20	246.80	8,336.5	-62.5	148.9	854.1	865.6	0.16	0.11	3.19
8,491.0	2.40	242.30	8,431.5	32.4	147.2	850.7	861.9	0.28	0.21	-4.74
8,585.0	2.90	241.50	8,525.4	126.3	145.2	846.8	857.7	0.53	0.53	-0.85
8,680.0	3.80	248.80	8,620.2	221.2	142.9	841.8	852.3	1.05	0.95	7.68

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8,774.0	2.60	249.80	8,714.0	315.0	141.0	836.9	847.1	1.28	-1.28	1.06
8,867.0	3.10	247.10	8,806.9	407.9	139.3	832.6	842.5	0.56	0.54	-2.90
8,963.0	3.30	251.50	8,902.8	503.8	137.4	827.6	837.2	0.33	0.21	4.58
9,057.0	4.10	251.10	8,996.6	597.6	135.5	821.8	831.2	0.85	0.85	-0.43
9,151.0	4.10	259.20	9,090.3	691.3	133.8	815.4	824.5	0.62	0.00	8.62
9,246.0	4.50	252.10	9,185.1	786.1	132.0	808.5	817.4	0.70	0.42	-7.47
9,255.0	3.90	252.20	9,194.1	795.0	131.8	807.9	816.7	6.67	-6.67	1.11
Projection to Bit										
9,310.0	0.20	252.80	9,249.0	850.0	131.2	806.0	814.7	6.73	-6.73	1.09

Survey Annotations					
Measured Depth (')	Vertical Depth (')	Local Coordinates			
		+N/-S (')	+E/-W (')	Comment	
9,310.0	9,249.0	131.2	806.0	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____