

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	RWF 541-36	Wellbore No.	
Well Name	RWF 541-36	Common Name	RWF 541-36
Project	RU 36-06S-094W	Site	RWF 32-36 Pad
Vertical Section Azimuth	77.41 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	12/16/2011	UWI	RWF 541-36
Active Datum	KB @6,451.4ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	12/16/2011	Ended	
Tool Name	MWD	Engineer	

#### 2.1.1 Tie On Point

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)
0.0	0.00	0.00	0.00	0.00	0.00

#### 2.1.2 Survey Stations

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
12/16/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/16/2011	NORMAL	85.0	0.26	24.52	85.00	0.18	0.08	0.12	0.31	0.31	0.00	24.52
	NORMAL	177.0	2.46	38.50	176.97	1.91	1.40	1.78	2.40	2.39	15.20	15.61
	NORMAL	268.0	4.75	71.10	267.79	4.66	6.18	7.04	3.28	2.52	35.82	58.89
12/17/2011	NORMAL	360.0	7.57	76.90	359.25	7.27	15.69	16.89	3.14	3.07	6.30	15.34
	NORMAL	451.0	9.94	79.45	449.18	10.07	29.25	30.74	2.64	2.60	2.80	10.56
	NORMAL	542.0	12.58	79.63	538.43	13.29	46.72	48.49	2.90	2.90	0.20	0.85
	NORMAL	633.0	15.04	79.19	626.79	17.29	68.07	70.20	2.71	2.70	-0.48	357.34
	NORMAL	704.0	16.67	78.01	695.08	21.13	87.08	89.59	2.34	2.30	-1.66	348.24
	NORMAL	795.0	17.53	77.25	782.06	26.87	113.21	116.35	0.98	0.95	-0.84	345.07
	NORMAL	887.0	18.93	77.87	869.44	33.06	141.32	145.13	1.54	1.52	0.67	8.18
	NORMAL	979.0	17.58	79.33	956.81	38.77	169.56	173.94	1.55	-1.47	1.59	161.98
	NORMAL	1,074.0	18.23	78.24	1,047.21	44.45	198.21	203.13	0.77	0.68	-1.15	332.21
	NORMAL	1,098.0	18.20	78.15	1,070.01	45.99	205.55	210.64	0.17	-0.12	-0.38	223.12
12/18/2011	NORMAL	1,167.0	18.88	77.50	1,135.42	50.62	227.00	232.57	1.03	0.99	-0.94	342.79
	NORMAL	1,263.0	17.77	78.40	1,226.55	56.93	256.51	262.75	1.19	-1.16	0.94	166.13
	NORMAL	1,358.0	18.53	77.52	1,316.83	63.10	285.45	292.35	0.85	0.80	-0.93	339.75
	NORMAL	1,454.0	17.39	79.18	1,408.15	69.09	314.44	321.94	1.30	-1.19	1.73	156.61
	NORMAL	1,549.0	17.14	78.67	1,498.87	74.51	342.11	350.13	0.31	-0.26	-0.54	210.95
	NORMAL	1,645.0	17.34	77.66	1,590.56	80.34	369.96	378.57	0.37	0.21	-1.05	303.27
	NORMAL	1,740.0	17.80	76.63	1,681.12	86.73	397.91	407.25	0.58	0.48	-1.08	325.45

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
12/18/2011	NORMAL	1,836.0	18.97	74.95	1,772.22	94.17	427.26	437.51	1.34	1.22	-1.75	334.84
	NORMAL	1,930.0	18.11	76.02	1,861.34	101.67	456.19	467.38	0.98	-0.91	1.14	158.92
	NORMAL	2,025.0	18.81	76.60	1,951.45	108.79	485.42	497.46	0.76	0.74	0.61	14.98
	NORMAL	2,121.0	17.34	73.39	2,042.72	116.46	514.18	527.21	1.85	-1.53	-3.34	212.60
12/19/2011	NORMAL	2,217.0	17.08	77.87	2,134.42	123.51	541.68	555.58	1.41	-0.27	4.67	103.23
	NORMAL	2,312.0	17.96	76.70	2,225.02	129.82	569.57	584.17	1.00	0.93	-1.23	337.63
	NORMAL	2,408.0	17.02	77.88	2,316.58	136.17	597.71	613.02	1.05	-0.98	1.23	159.89
	NORMAL	2,502.0	17.59	78.94	2,406.32	141.78	625.10	640.98	0.69	0.61	1.13	29.46
	NORMAL	2,596.0	17.51	78.46	2,495.95	147.34	652.90	669.31	0.18	-0.09	-0.51	240.84
	NORMAL	2,691.0	18.19	76.80	2,586.37	153.58	681.34	698.43	0.89	0.72	-1.75	322.40
	NORMAL	2,786.0	19.50	76.48	2,676.28	160.68	711.19	729.11	1.38	1.38	-0.34	355.34
	NORMAL	2,882.0	18.00	79.04	2,767.18	167.24	741.33	759.96	1.78	-1.56	2.67	152.46
	NORMAL	2,978.0	17.88	78.88	2,858.52	172.90	770.36	789.52	0.14	-0.12	-0.17	202.25
	NORMAL	3,071.0	18.17	78.91	2,946.95	178.45	798.60	818.29	0.31	0.31	0.03	1.85
	NORMAL	3,164.0	16.80	76.80	3,035.65	184.31	825.91	846.23	1.62	-1.47	-2.27	203.83
	NORMAL	3,259.0	16.68	75.33	3,126.63	190.89	852.47	873.58	0.46	-0.13	-1.55	253.47
	NORMAL	3,354.0	17.26	75.89	3,217.49	197.78	879.33	901.29	0.63	0.61	0.59	16.01
	NORMAL	3,450.0	17.23	76.71	3,309.18	204.52	906.98	929.75	0.26	-0.03	0.85	97.43
	NORMAL	3,545.0	17.23	77.09	3,399.91	210.90	934.38	957.89	0.12	0.00	0.40	90.18
	NORMAL	3,641.0	16.84	77.92	3,491.70	216.99	961.84	986.01	0.48	-0.41	0.86	148.45
	NORMAL	3,737.0	16.75	78.27	3,583.60	222.71	988.98	1,013.75	0.14	-0.09	0.36	131.83
	NORMAL	3,832.0	17.21	77.43	3,674.46	228.55	1,016.10	1,041.49	0.55	0.48	-0.88	331.53
	NORMAL	3,926.0	17.59	78.41	3,764.16	234.43	1,043.59	1,069.60	0.51	0.40	1.04	38.11
	NORMAL	4,021.0	17.55	79.19	3,854.73	240.00	1,071.72	1,098.26	0.25	-0.04	0.82	100.01
	NORMAL	4,116.0	18.33	77.67	3,945.11	245.88	1,100.38	1,127.52	0.96	0.82	-1.60	328.30
	NORMAL	4,212.0	18.55	76.39	4,036.18	252.69	1,129.97	1,157.88	0.48	0.23	-1.33	297.91
	NORMAL	4,307.0	18.73	77.04	4,126.20	259.67	1,159.52	1,188.24	0.29	0.19	0.68	49.40
	NORMAL	4,401.0	17.45	77.71	4,215.55	266.06	1,188.00	1,217.43	1.38	-1.36	0.71	171.09
	NORMAL	4,496.0	17.06	78.07	4,306.28	271.97	1,215.56	1,245.61	0.43	-0.41	0.38	164.86
	NORMAL	4,590.0	16.56	77.29	4,396.26	277.77	1,242.11	1,272.79	0.58	-0.53	-0.83	203.91
	NORMAL	4,686.0	16.52	78.79	4,488.29	283.43	1,268.85	1,300.12	0.45	-0.04	1.56	96.07
	NORMAL	4,782.0	17.58	75.25	4,580.07	289.78	1,296.26	1,328.25	1.54	1.10	-3.69	313.90
12/20/2011	NORMAL	4,877.0	18.00	74.48	4,670.53	297.36	1,324.28	1,357.25	0.51	0.44	-0.81	330.38
	NORMAL	4,973.0	18.25	72.63	4,761.76	305.81	1,352.91	1,387.04	0.65	0.26	-1.93	292.60
	NORMAL	5,069.0	17.38	77.54	4,853.16	313.39	1,381.26	1,416.36	1.81	-0.91	5.11	122.40
	NORMAL	5,164.0	17.23	78.69	4,943.86	319.21	1,408.91	1,444.62	0.39	-0.16	1.21	114.23
	NORMAL	5,260.0	16.88	78.97	5,035.64	324.67	1,436.54	1,472.76	0.37	-0.36	0.29	166.93
	NORMAL	5,355.0	17.26	78.59	5,126.46	330.10	1,463.89	1,500.64	0.42	0.40	-0.40	343.46
	NORMAL	5,450.0	17.41	78.27	5,217.14	335.77	1,491.62	1,528.94	0.19	0.16	-0.34	327.41
	NORMAL	5,546.0	16.18	78.33	5,309.05	341.40	1,518.78	1,556.68	1.28	-1.28	0.06	179.22
	NORMAL	5,642.0	14.40	77.70	5,401.64	346.65	1,543.55	1,581.99	1.86	-1.85	-0.66	185.03
	NORMAL	5,737.0	13.36	73.90	5,493.87	352.21	1,565.63	1,604.76	1.46	-1.09	-4.00	219.40
12/21/2011	NORMAL	5,833.0	12.28	73.98	5,587.48	358.10	1,586.10	1,626.02	1.13	-1.13	0.08	179.10
	NORMAL	5,928.0	11.62	75.06	5,680.42	363.36	1,605.06	1,645.67	0.73	-0.69	1.14	161.81
	NORMAL	6,024.0	11.18	74.45	5,774.52	368.34	1,623.37	1,664.62	0.48	-0.46	-0.64	195.03
	NORMAL	6,119.0	8.90	76.52	5,868.06	372.53	1,639.39	1,681.17	2.43	-2.40	2.18	172.02
	NORMAL	6,215.0	6.16	77.52	5,963.23	375.37	1,651.64	1,693.75	2.86	-2.85	1.04	177.76
	NORMAL	6,310.0	5.58	79.08	6,057.73	377.35	1,661.15	1,703.46	0.63	-0.61	1.64	165.39
	NORMAL	6,406.0	4.57	75.95	6,153.35	379.16	1,669.44	1,711.95	1.09	-1.05	-3.26	193.78
	NORMAL	6,502.0	4.16	78.72	6,249.07	380.77	1,676.57	1,719.25	0.48	-0.43	2.89	154.16
	NORMAL	6,597.0	3.96	78.41	6,343.83	382.10	1,683.16	1,725.98	0.21	-0.21	-0.33	186.11
	NORMAL	6,692.0	3.34	79.03	6,438.64	383.29	1,689.09	1,732.02	0.65	-0.65	0.65	176.67
12/22/2011	NORMAL	6,787.0	1.75	79.93	6,533.54	384.07	1,693.24	1,736.24	1.67	-1.67	0.95	179.01
	NORMAL	6,882.0	1.41	86.50	6,628.51	384.39	1,695.83	1,738.84	0.40	-0.36	6.92	155.21
	NORMAL	6,977.0	1.28	91.09	6,723.48	384.45	1,698.06	1,741.03	0.18	-0.14	4.83	142.63
	NORMAL	7,073.0	0.48	109.23	6,819.47	384.29	1,699.51	1,742.41	0.87	-0.83	18.90	169.72
	NORMAL	7,168.0	0.65	156.44	6,914.46	383.67	1,700.10	1,742.85	0.50	0.18	49.69	94.61

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
12/22/2011	NORMAL	7,262.0	0.17	235.83	7,008.46	383.10	1,700.20	1,742.82	0.68	-0.51	84.46	164.89
	NORMAL	7,358.0	1.08	344.46	7,104.46	383.89	1,699.84	1,742.65	1.19	0.95	113.16	116.71
	NORMAL	7,453.0	0.95	316.29	7,199.44	385.32	1,699.06	1,742.19	0.54	-0.14	-29.65	241.60
	NORMAL	7,548.0	0.97	271.60	7,294.43	385.92	1,697.71	1,741.01	0.77	0.02	-47.04	249.11
	NORMAL	7,643.0	0.34	310.69	7,389.42	386.12	1,696.69	1,740.06	0.78	-0.66	41.15	163.11
12/23/2011	NORMAL	7,739.0	0.30	324.63	7,485.42	386.51	1,696.33	1,739.79	0.09	-0.04	14.52	124.05
	NORMAL	7,833.0	0.53	257.60	7,579.42	386.62	1,695.76	1,739.26	0.53	0.24	-71.31	259.19
	NORMAL	7,929.0	0.81	263.61	7,675.41	386.45	1,694.65	1,738.14	0.30	0.29	6.26	17.11
	NORMAL	8,022.0	0.53	221.85	7,768.41	386.08	1,693.71	1,737.14	0.59	-0.30	-44.90	220.41
	NORMAL	8,118.0	0.48	177.39	7,864.40	385.32	1,693.44	1,736.71	0.40	-0.05	-46.31	240.86
	NORMAL	8,213.0	1.21	181.60	7,959.39	383.92	1,693.43	1,736.39	0.77	0.77	4.43	6.97
	NORMAL	8,309.0	1.45	183.39	8,055.37	381.70	1,693.33	1,735.81	0.25	0.25	1.86	10.72
	NORMAL	8,404.0	0.90	169.90	8,150.35	379.76	1,693.39	1,735.45	0.64	-0.58	-14.20	200.06
12/24/2011	NORMAL	8,500.0	0.53	164.99	8,246.34	378.59	1,693.63	1,735.43	0.39	-0.39	-5.11	186.95
	NORMAL	8,596.0	0.44	211.57	8,342.34	377.85	1,693.55	1,735.19	0.41	-0.09	48.52	125.45
	NORMAL	8,691.0	0.69	221.08	8,437.33	377.11	1,692.99	1,734.48	0.28	0.26	10.01	25.36
	NORMAL	8,787.0	0.97	228.76	8,533.32	376.14	1,692.00	1,733.30	0.31	0.29	8.00	25.54
	NORMAL	8,883.0	0.85	260.41	8,629.31	375.48	1,690.68	1,731.88	0.53	-0.12	32.97	118.92
	NORMAL	8,978.0	1.37	251.91	8,724.29	375.01	1,688.91	1,730.04	0.57	0.55	-8.95	338.15
	NORMAL	9,063.0	1.93	243.38	8,809.26	374.05	1,686.66	1,727.64	0.72	0.66	-10.04	332.02
	NORMAL	9,120.0	2.31	237.66	8,866.22	373.01	1,684.84	1,725.63	0.76	0.67	-10.04	328.01