

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 513-36	Wellbore No.	
Well Name	RWF 513-36	Common Name	RWF 513-36
Project	RU 36-06S-094W	Site	RWF 33-36 Pad
Vertical Section Azimuth	225.75 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	12/18/2012	UWI	RWF 513-36
Active Datum	KB @6,554.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	12/18/2012	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

6463

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 (°)
12/18/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/18/2012	NORMAL	82.0	0.09	143.79	82.00	-0.05	0.04	0.01	0.11	0.11	0.00	143.79
	NORMAL	179.0	3.26	251.10	178.95	-1.01	-2.53	2.51	3.39	3.27	110.63	108.81
	NORMAL	270.0	4.05	233.88	269.76	-3.74	-7.57	8.03	1.48	0.87	-18.92	296.94
	NORMAL	361.0	6.25	221.22	360.39	-9.36	-13.43	16.15	2.71	2.42	-13.91	326.28
	NORMAL	428.0	7.93	224.32	426.88	-15.41	-19.06	24.41	2.57	2.51	4.63	14.37
	NORMAL	519.0	10.30	224.42	516.72	-25.71	-29.15	38.82	2.60	2.60	0.11	0.43
	NORMAL	609.0	13.72	224.80	604.74	-39.04	-42.30	57.54	3.80	3.80	0.42	1.51
	NORMAL	700.0	17.67	224.80	692.33	-56.50	-59.64	82.15	4.34	4.34	0.00	0.00
	NORMAL	791.0	22.54	225.63	777.76	-78.51	-81.86	113.42	5.36	5.35	0.91	3.74
	NORMAL	881.0	23.99	225.73	860.44	-103.35	-107.29	148.97	1.61	1.61	0.11	1.61
	NORMAL	972.0	24.46	225.62	943.43	-129.44	-134.00	186.31	0.52	0.52	-0.12	354.46
	NORMAL	1,068.0	24.89	226.20	1,030.66	-157.32	-162.79	226.38	0.51	0.45	0.60	29.65
12/20/2012	NORMAL	1,256.0	22.95	223.65	1,202.51	-211.23	-216.65	302.58	1.17	-1.03	-1.36	206.89
	NORMAL	1,351.0	22.77	224.36	1,290.05	-237.78	-242.29	339.47	0.35	-0.19	0.75	123.46
	NORMAL	1,447.0	22.71	223.50	1,378.59	-264.50	-268.03	376.56	0.35	-0.06	-0.90	259.37
	NORMAL	1,543.0	23.75	224.56	1,466.80	-291.72	-294.35	414.40	1.17	1.08	1.10	22.39
	NORMAL	1,639.0	23.36	223.24	1,554.81	-319.36	-320.96	452.75	0.68	-0.41	-1.38	232.92
	NORMAL	1,734.0	25.83	225.87	1,641.18	-347.49	-348.72	492.27	2.84	2.60	2.77	25.10
	NORMAL	1,830.0	26.03	226.12	1,727.52	-376.66	-378.91	534.24	0.24	0.21	0.26	28.77
	NORMAL	1,925.0	25.59	225.06	1,813.04	-405.60	-408.46	575.60	0.67	-0.46	-1.12	225.89

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 (°)
12/20/2012	NORMAL	2,021.0	26.55	227.34	1,899.27	-434.78	-438.92	617.78	1.45	1.00	2.38	47.25
	NORMAL	2,117.0	26.65	226.82	1,985.11	-464.05	-470.39	660.76	0.26	0.10	-0.54	293.01
	NORMAL	2,213.0	26.90	226.54	2,070.82	-493.73	-501.86	704.00	0.29	0.26	-0.29	333.10
	NORMAL	2,308.0	26.45	225.37	2,155.71	-523.37	-532.51	746.64	0.73	-0.47	-1.23	228.89
	NORMAL	2,402.0	24.78	226.12	2,240.47	-551.74	-561.61	787.28	1.81	-1.78	0.80	169.35
	NORMAL	2,498.0	24.32	225.36	2,327.79	-579.57	-590.18	827.17	0.58	-0.48	-0.79	214.12
	NORMAL	2,593.0	24.45	225.32	2,414.32	-607.14	-618.08	866.39	0.14	0.14	-0.04	352.74
	NORMAL	2,688.0	23.90	224.96	2,500.98	-634.58	-645.65	905.29	0.60	-0.58	-0.38	194.84
	NORMAL	2,784.0	22.55	224.84	2,589.20	-661.40	-672.38	943.14	1.41	-1.41	-0.12	181.95
	NORMAL	2,879.0	23.43	227.87	2,676.66	-686.98	-699.23	980.23	1.55	0.93	3.19	54.77
	NORMAL	2,971.0	23.29	226.23	2,761.12	-711.84	-725.93	1,016.70	0.72	-0.15	-1.78	257.10
	NORMAL	3,067.0	22.72	225.99	2,849.48	-737.84	-752.97	1,054.21	0.60	-0.59	-0.25	189.23
	NORMAL	3,162.0	23.58	227.51	2,936.83	-763.43	-780.18	1,091.55	1.10	0.91	1.60	35.49
	NORMAL	3,257.0	23.34	227.18	3,023.98	-789.05	-807.99	1,129.36	0.29	-0.25	-0.35	208.55
	NORMAL	3,353.0	23.48	227.61	3,112.08	-814.87	-836.06	1,167.48	0.23	0.15	0.45	50.86
	12/21/2012	NORMAL	3,448.0	24.39	227.31	3,198.91	-840.93	-864.46	1,206.01	0.97	0.96	-0.32
NORMAL		3,544.0	23.69	227.39	3,286.58	-867.43	-893.22	1,245.10	0.73	-0.73	0.08	177.37
NORMAL		3,640.0	25.06	226.64	3,374.02	-894.44	-922.20	1,284.71	1.46	1.43	-0.78	346.93
NORMAL		3,734.0	23.74	227.35	3,459.62	-920.93	-950.59	1,323.53	1.44	-1.40	0.76	167.80
NORMAL		3,830.0	25.40	225.45	3,546.93	-948.47	-979.48	1,363.44	1.91	1.73	-1.98	333.68
NORMAL		3,925.0	25.89	225.08	3,632.57	-977.41	-1,008.69	1,404.55	0.54	0.52	-0.39	341.74
NORMAL		4,021.0	25.90	224.88	3,718.93	-1,007.07	-1,038.32	1,446.47	0.09	0.01	-0.21	276.44
NORMAL		4,116.0	25.95	224.73	3,804.37	-1,036.53	-1,067.59	1,488.00	0.09	0.05	-0.16	307.26
NORMAL		4,212.0	25.49	223.75	3,890.86	-1,066.38	-1,096.66	1,529.65	0.65	-0.48	-1.02	222.31
NORMAL		4,307.0	24.26	225.94	3,977.05	-1,094.72	-1,124.82	1,569.60	1.62	-1.29	2.31	144.16
NORMAL		4,402.0	24.30	225.56	4,063.65	-1,121.98	-1,152.80	1,608.66	0.17	0.04	-0.40	284.19
NORMAL		4,498.0	24.49	225.04	4,151.08	-1,149.87	-1,180.98	1,648.31	0.30	0.20	-0.54	311.26
NORMAL		4,594.0	24.60	227.42	4,238.40	-1,177.45	-1,209.78	1,688.18	1.04	0.11	2.48	84.73
NORMAL		4,690.0	24.84	227.61	4,325.61	-1,204.56	-1,239.38	1,728.30	0.26	0.25	0.20	18.40
NORMAL		4,785.0	24.97	227.79	4,411.77	-1,231.49	-1,268.97	1,768.29	0.16	0.14	0.19	30.33
NORMAL		4,881.0	24.95	227.86	4,498.80	-1,258.69	-1,299.00	1,808.77	0.04	-0.02	0.07	124.13
NORMAL	4,977.0	24.20	224.72	4,586.11	-1,286.25	-1,327.86	1,848.68	1.57	-0.78	-3.27	238.71	
12/22/2012	NORMAL	5,073.0	22.08	226.75	4,674.39	-1,312.60	-1,354.85	1,886.40	2.36	-2.21	2.11	160.31
	NORMAL	5,168.0	21.60	225.46	4,762.57	-1,337.10	-1,380.32	1,921.74	0.71	-0.51	-1.36	224.40
	NORMAL	5,262.0	19.56	228.32	4,850.57	-1,359.70	-1,404.40	1,954.76	2.42	-2.17	3.04	155.10
	NORMAL	5,367.0	17.67	225.41	4,950.07	-1,382.58	-1,428.88	1,988.26	2.01	-1.80	-2.77	204.80
	NORMAL	5,453.0	17.41	225.41	5,032.07	-1,400.77	-1,447.34	2,014.18	0.30	-0.30	0.00	180.00
	NORMAL	5,547.0	16.18	225.32	5,122.06	-1,419.86	-1,466.67	2,041.34	1.31	-1.31	-0.10	181.17
	NORMAL	5,643.0	14.15	227.01	5,214.71	-1,437.26	-1,484.76	2,066.45	2.16	-2.11	1.76	168.53
	NORMAL	5,738.0	12.93	226.64	5,307.07	-1,452.48	-1,500.98	2,088.69	1.29	-1.28	-0.39	183.88
	NORMAL	5,834.0	12.46	226.09	5,400.72	-1,467.04	-1,516.25	2,109.78	0.51	-0.49	-0.57	194.15
	NORMAL	5,929.0	10.50	228.12	5,493.82	-1,479.92	-1,530.08	2,128.68	2.11	-2.06	2.14	169.35
	NORMAL	6,022.0	8.95	227.06	5,585.48	-1,490.51	-1,541.69	2,144.38	1.68	-1.67	-1.14	186.07
	NORMAL	6,118.0	7.66	225.56	5,680.47	-1,500.08	-1,551.73	2,158.24	1.36	-1.34	-1.56	188.79
	NORMAL	6,213.0	6.66	225.01	5,774.73	-1,508.41	-1,560.14	2,170.08	1.06	-1.05	-0.58	183.65
	NORMAL	6,309.0	5.50	228.92	5,870.19	-1,515.36	-1,567.55	2,180.24	1.28	-1.21	4.07	162.29
	NORMAL	6,404.0	3.69	223.65	5,964.88	-1,520.57	-1,573.09	2,187.85	1.95	-1.91	-5.55	190.51
	12/23/2012	NORMAL	6,500.0	2.95	220.62	6,060.72	-1,524.68	-1,576.83	2,193.39	0.79	-0.77	-3.16
NORMAL		6,596.0	2.14	229.09	6,156.62	-1,527.73	-1,579.79	2,197.64	0.93	-0.84	8.82	159.28
NORMAL		6,691.0	0.94	225.65	6,251.59	-1,529.43	-1,581.69	2,200.19	1.27	-1.26	-3.62	182.69
NORMAL		6,787.0	1.11	205.33	6,347.57	-1,530.83	-1,582.65	2,201.85	0.42	0.18	-21.17	284.67
NORMAL		6,882.0	1.23	204.02	6,442.55	-1,532.59	-1,583.46	2,203.66	0.13	0.13	-1.38	346.78
NORMAL		6,978.0	0.73	200.21	6,538.54	-1,534.10	-1,584.09	2,205.17	0.52	-0.52	-3.97	185.52
NORMAL		7,074.0	0.75	192.43	6,634.53	-1,535.29	-1,584.44	2,206.25	0.11	0.02	-8.10	277.35
NORMAL		7,169.0	0.93	201.56	6,729.52	-1,536.62	-1,584.86	2,207.47	0.24	0.19	9.61	41.26
NORMAL		7,265.0	0.93	212.70	6,825.51	-1,538.00	-1,585.56	2,208.94	0.19	0.00	11.60	95.57
NORMAL		7,360.0	0.70	221.02	6,920.50	-1,539.08	-1,586.36	2,210.27	0.27	-0.24	8.76	156.89

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 (°)
12/23/2012	NORMAL	7,456.0	0.62	214.25	7,016.49	-1,539.95	-1,587.04	2,211.36	0.12	-0.08	-7.05	220.92
	NORMAL	7,552.0	1.14	211.00	7,112.48	-1,541.20	-1,587.82	2,212.80	0.54	0.54	-3.39	352.89
	NORMAL	7,647.0	0.88	208.80	7,207.46	-1,542.65	-1,588.66	2,214.41	0.28	-0.27	-2.32	187.38
12/24/2012	NORMAL	7,743.0	0.98	178.25	7,303.45	-1,544.12	-1,588.99	2,215.67	0.52	0.10	-31.82	265.86
	NORMAL	7,838.0	0.38	184.09	7,398.44	-1,545.24	-1,588.99	2,216.45	0.63	-0.63	6.15	176.32
	NORMAL	7,934.0	0.51	167.05	7,494.44	-1,545.98	-1,588.91	2,216.91	0.19	0.14	-17.75	305.76
	NORMAL	8,030.0	0.50	31.36	7,590.44	-1,546.04	-1,588.60	2,216.73	0.97	-0.01	-141.34	201.92
	NORMAL	8,125.0	0.67	354.23	7,685.44	-1,545.13	-1,588.44	2,215.98	0.43	0.18	-39.08	274.83
	NORMAL	8,221.0	0.85	337.81	7,781.43	-1,543.91	-1,588.77	2,215.36	0.29	0.19	-17.10	301.17
	NORMAL	8,317.0	0.89	326.90	7,877.42	-1,542.63	-1,589.44	2,214.95	0.18	0.04	-11.36	278.08
	NORMAL	8,412.0	1.03	313.09	7,972.40	-1,541.43	-1,590.47	2,214.85	0.28	0.15	-14.54	294.15
	NORMAL	8,508.0	1.14	306.97	8,068.39	-1,540.26	-1,591.86	2,215.03	0.17	0.11	-6.38	310.42
12/25/2012	NORMAL	8,603.0	1.32	308.56	8,163.36	-1,539.01	-1,593.47	2,215.32	0.19	0.19	1.67	11.53
	NORMAL	8,699.0	0.88	290.42	8,259.35	-1,538.07	-1,595.03	2,215.77	0.58	-0.46	-18.90	209.53
12/26/2012	NORMAL	8,794.0	1.22	238.45	8,354.33	-1,538.34	-1,596.57	2,217.07	1.02	0.36	-54.71	262.39
	NORMAL	8,890.0	1.64	218.90	8,450.30	-1,539.94	-1,598.31	2,219.43	0.66	0.44	-20.36	300.68
	NORMAL	8,986.0	2.01	224.67	8,546.25	-1,542.21	-1,600.35	2,222.48	0.43	0.39	6.01	29.31
	NORMAL	9,081.0	2.02	234.47	8,641.20	-1,544.37	-1,602.89	2,225.80	0.36	0.01	10.32	93.24
	NORMAL	9,157.0	2.02	234.47	8,717.15	-1,545.93	-1,605.07	2,228.44	0.00	0.00	0.00	0.00