

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	RWF 542-31	Wellbore No.	1
Well Name	RWF 542-31	Common Name	RWF 542-31
Project	RU 32-06S-094W	Site	RWF 11-32 Pad
Vertical Section Azimuth	225.52 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	7/4/2012	UWI	RWF 542-31
Active Datum	KB @5,560.2ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	7/5/2012	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

6193

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Buidl Rate (°/100ft)	Turn (°/100ft)	TFace (°)
7/5/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/5/2012	NORMAL	73.0	0.62	263.67	73.00	-0.04	-0.39	0.31	0.85	0.85	0.00	263.67
	NORMAL	164.0	2.55	221.75	163.96	-1.61	-2.23	2.72	2.34	2.12	-46.07	306.87
	NORMAL	254.0	5.81	225.26	253.71	-6.31	-6.80	9.27	3.63	3.62	3.90	6.24
	NORMAL	344.0	8.71	225.62	342.98	-14.28	-14.91	20.65	3.22	3.22	0.40	1.08
	NORMAL	434.0	12.40	223.42	431.44	-26.07	-26.42	37.12	4.12	4.10	-2.44	352.68
	NORMAL	524.0	16.80	222.80	518.51	-42.64	-41.91	59.78	4.89	4.89	-0.69	357.67
	NORMAL	595.0	19.43	221.05	585.99	-59.08	-56.64	81.81	3.78	3.70	-2.46	347.48
	NORMAL	686.0	22.82	225.06	670.87	-82.97	-79.08	114.55	4.05	3.73	4.41	24.97
	NORMAL	777.0	24.96	226.32	754.06	-108.70	-105.46	151.40	2.42	2.35	1.38	13.99
	NORMAL	868.0	24.40	226.71	836.75	-134.85	-133.03	189.39	0.64	-0.62	0.43	163.96
	NORMAL	959.0	24.73	226.86	919.52	-160.75	-160.60	227.22	0.37	0.36	0.16	10.77
	NORMAL	1,053.0	23.65	226.06	1,005.26	-187.28	-188.52	265.73	1.20	-1.15	-0.85	196.52
	NORMAL	1,147.0	24.57	225.32	1,091.06	-214.10	-215.99	304.12	1.03	0.98	-0.79	341.47
7/7/2012	NORMAL	1,241.0	25.59	225.51	1,176.20	-242.07	-244.37	343.97	1.09	1.09	0.20	4.60
	NORMAL	1,335.0	23.57	223.40	1,261.67	-269.96	-271.77	383.06	2.34	-2.15	-2.24	202.53
	NORMAL	1,429.0	23.71	223.76	1,347.79	-297.26	-297.76	420.73	0.21	0.15	0.38	46.04
	NORMAL	1,522.0	24.69	224.25	1,432.61	-324.68	-324.24	458.84	1.08	1.05	0.53	11.81
	NORMAL	1,616.0	24.69	227.73	1,518.02	-351.95	-352.47	498.08	1.55	0.00	3.70	91.58
	NORMAL	1,709.0	24.44	227.38	1,602.61	-378.04	-381.00	536.72	0.31	-0.27	-0.38	210.04
	NORMAL	1,803.0	24.26	227.53	1,688.24	-404.25	-409.56	575.46	0.20	-0.19	0.16	161.11

## 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 (°)
7/7/2012	NORMAL	1,897.0	24.28	227.16	1,773.94	-430.43	-437.97	614.07	0.16	0.02	-0.39	277.32
	NORMAL	1,991.0	23.83	225.95	1,859.77	-456.77	-465.79	652.38	0.71	-0.48	-1.29	227.07
	NORMAL	2,085.0	22.91	226.19	1,946.06	-482.64	-492.64	689.67	0.98	-0.98	0.26	174.20
	NORMAL	2,179.0	24.94	226.78	2,031.98	-508.88	-520.29	727.78	2.17	2.16	0.63	6.99
	NORMAL	2,273.0	24.88	225.84	2,117.24	-536.23	-548.92	767.37	0.43	-0.06	-1.00	260.96
	NORMAL	2,367.0	25.04	226.23	2,202.46	-563.77	-577.47	807.03	0.24	0.17	0.41	45.98
	NORMAL	2,460.0	24.11	226.37	2,287.03	-590.49	-605.43	845.70	1.00	-1.00	0.15	176.48
	NORMAL	2,553.0	23.56	225.50	2,372.10	-616.62	-632.44	883.28	0.70	-0.59	-0.94	212.19
	NORMAL	2,647.0	22.75	226.08	2,458.53	-642.40	-658.93	920.24	0.90	-0.86	0.62	164.54
	NORMAL	2,741.0	23.69	225.27	2,544.91	-668.29	-685.44	957.30	1.06	1.00	-0.86	340.86
	NORMAL	2,833.0	24.37	224.73	2,628.94	-694.79	-711.93	994.77	0.78	0.74	-0.59	341.83
	NORMAL	2,927.0	24.40	224.06	2,714.55	-722.52	-739.08	1,033.57	0.30	0.03	-0.71	275.88
	NORMAL	3,020.0	24.36	224.63	2,799.26	-749.97	-765.91	1,071.95	0.26	-0.04	0.61	99.91
	NORMAL	3,114.0	23.93	224.40	2,885.04	-777.39	-792.87	1,110.39	0.47	-0.46	-0.24	192.24
	NORMAL	3,208.0	22.99	223.48	2,971.27	-804.33	-818.84	1,147.80	1.07	-1.00	-0.98	200.87
	NORMAL	3,302.0	24.07	223.63	3,057.45	-831.53	-844.70	1,185.30	1.15	1.15	0.16	3.24
	NORMAL	3,395.0	24.89	228.24	3,142.09	-858.29	-872.38	1,223.81	2.23	0.88	4.96	68.88
	NORMAL	3,489.0	24.58	225.27	3,227.47	-885.22	-901.03	1,263.12	1.36	-0.33	-3.16	254.65
	NORMAL	3,583.0	24.09	225.13	3,313.12	-912.52	-928.52	1,301.86	0.52	-0.52	-0.15	186.65
	NORMAL	3,677.0	23.21	225.25	3,399.23	-939.09	-955.27	1,339.56	0.94	-0.94	0.13	176.92
7/8/2012	NORMAL	3,770.0	23.83	224.19	3,484.50	-965.47	-981.38	1,376.67	0.81	0.67	-1.14	325.21
	NORMAL	3,864.0	25.16	224.76	3,570.04	-993.27	-1,008.68	1,415.64	1.44	1.41	0.61	10.34
	NORMAL	3,958.0	25.05	225.05	3,655.16	-1,021.52	-1,036.84	1,455.52	0.18	-0.12	0.31	131.93
	NORMAL	4,052.0	25.29	225.64	3,740.23	-1,049.62	-1,065.28	1,495.49	0.37	0.26	0.63	46.54
	NORMAL	4,146.0	23.39	224.77	3,825.87	-1,076.90	-1,092.78	1,534.23	2.06	-2.02	-0.93	190.29
	NORMAL	4,239.0	22.86	222.79	3,911.40	-1,103.27	-1,118.05	1,570.74	1.01	-0.57	-2.13	234.82
	NORMAL	4,333.0	23.55	222.59	3,997.80	-1,130.49	-1,143.16	1,607.73	0.74	0.73	-0.21	353.39
	NORMAL	4,427.0	22.54	224.68	4,084.30	-1,157.13	-1,168.54	1,644.50	1.38	-1.07	2.22	141.95
	NORMAL	4,521.0	21.47	225.78	4,171.45	-1,181.94	-1,193.54	1,679.72	1.22	-1.14	1.17	159.44
	NORMAL	4,614.0	19.28	227.25	4,258.62	-1,204.23	-1,217.01	1,712.09	2.42	-2.35	1.58	167.53
	NORMAL	4,707.0	18.91	229.29	4,346.51	-1,224.48	-1,239.71	1,742.47	0.82	-0.40	2.19	119.97
	NORMAL	4,800.0	18.35	228.28	4,434.63	-1,244.05	-1,262.06	1,772.13	0.69	-0.60	-1.09	209.47
	NORMAL	4,893.0	17.69	227.18	4,523.07	-1,263.40	-1,283.35	1,800.88	0.80	-0.71	-1.18	206.75
	NORMAL	4,987.0	16.80	226.57	4,612.85	-1,282.45	-1,303.69	1,828.74	0.97	-0.95	-0.65	191.19
	NORMAL	5,081.0	16.14	223.07	4,702.99	-1,301.33	-1,322.48	1,855.37	1.27	-0.70	-3.72	234.70
	NORMAL	5,175.0	15.31	230.44	4,793.48	-1,318.78	-1,340.97	1,880.79	2.30	-0.88	7.84	116.08
	NORMAL	5,268.0	14.25	228.76	4,883.40	-1,334.15	-1,359.04	1,904.46	1.23	-1.14	-1.81	201.20
	NORMAL	5,364.0	14.07	227.89	4,976.49	-1,349.76	-1,376.59	1,927.91	0.29	-0.19	-0.91	229.36
	NORMAL	5,460.0	11.96	225.78	5,070.02	-1,364.52	-1,392.37	1,949.52	2.25	-2.20	-2.20	191.67
7/9/2012	NORMAL	5,554.0	11.68	225.15	5,162.02	-1,378.03	-1,406.10	1,968.77	0.33	-0.30	-0.67	204.44
	NORMAL	5,649.0	10.21	227.19	5,255.29	-1,390.53	-1,419.09	1,986.81	1.60	-1.55	2.15	166.24
	NORMAL	5,744.0	8.00	224.37	5,349.09	-1,400.98	-1,429.90	2,001.83	2.37	-2.33	-2.97	190.03
	NORMAL	5,840.0	6.13	228.23	5,444.36	-1,409.17	-1,438.39	2,013.63	2.01	-1.95	4.02	167.66
	NORMAL	5,936.0	5.28	225.42	5,539.88	-1,415.69	-1,445.36	2,023.17	0.93	-0.89	-2.93	196.80
	NORMAL	6,032.0	3.05	216.76	5,635.62	-1,420.83	-1,450.03	2,030.11	2.41	-2.32	-9.02	191.46
	NORMAL	6,128.0	1.16	176.80	5,731.56	-1,423.85	-1,451.51	2,033.28	2.38	-1.97	-41.63	199.03
	NORMAL	6,224.0	0.39	54.74	5,827.55	-1,424.63	-1,451.19	2,033.60	1.46	-0.80	-127.15	193.59
	NORMAL	6,320.0	0.55	95.40	5,923.55	-1,424.49	-1,450.46	2,032.98	0.37	0.17	42.35	85.65
	NORMAL	6,416.0	0.26	155.99	6,019.55	-1,424.73	-1,449.92	2,032.76	0.50	-0.30	63.11	151.79
7/10/2012	NORMAL	6,512.0	0.22	61.93	6,115.55	-1,424.84	-1,449.66	2,032.66	0.37	-0.04	-97.98	218.53
	NORMAL	6,607.0	0.48	187.37	6,210.54	-1,425.15	-1,449.55	2,032.80	0.67	0.27	132.04	141.88
	NORMAL	6,702.0	0.09	145.33	6,305.54	-1,425.61	-1,449.56	2,033.12	0.44	-0.41	-44.25	188.30
	NORMAL	6,796.0	0.71	200.73	6,399.54	-1,426.21	-1,449.73	2,033.66	0.71	0.66	58.94	61.81
	NORMAL	6,891.0	0.50	300.41	6,494.54	-1,426.55	-1,450.29	2,034.30	0.98	-0.22	104.93	148.17
	NORMAL	6,986.0	0.40	205.51	6,589.54	-1,426.64	-1,450.79	2,034.72	0.70	-0.11	-99.89	216.73
	NORMAL	7,080.0	0.18	201.00	6,683.53	-1,427.07	-1,450.99	2,035.17	0.24	-0.23	-4.80	183.67
	NORMAL	7,174.0	0.76	329.59	6,777.53	-1,426.68	-1,451.36	2,035.15	0.94	0.62	136.80	137.75

## 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 (°)
7/11/2012	NORMAL	7,267.0	0.66	43.06	6,870.53	-1,425.75	-1,451.30	2,034.46	0.92	-0.11	79.00	132.12
	NORMAL	7,362.0	0.11	57.75	6,965.52	-1,425.30	-1,450.85	2,033.83	0.58	-0.58	15.46	177.12
	NORMAL	7,456.0	0.09	36.46	7,059.52	-1,425.20	-1,450.73	2,033.67	0.04	-0.02	-22.65	231.34
	NORMAL	7,549.0	0.66	58.65	7,152.52	-1,424.86	-1,450.23	2,033.07	0.62	0.61	23.86	25.56
	NORMAL	7,644.0	0.62	43.31	7,247.52	-1,424.20	-1,449.41	2,032.03	0.18	-0.04	-16.15	249.27
	NORMAL	7,738.0	0.50	38.68	7,341.51	-1,423.51	-1,448.81	2,031.11	0.14	-0.13	-4.93	198.36
	NORMAL	7,832.0	0.60	25.09	7,435.51	-1,422.74	-1,448.34	2,030.24	0.17	0.11	-14.46	300.55
	NORMAL	7,926.0	0.53	338.10	7,529.50	-1,421.89	-1,448.29	2,029.62	0.48	-0.07	-49.99	238.40
	NORMAL	8,020.0	0.80	284.54	7,623.50	-1,421.33	-1,449.09	2,029.79	0.69	0.29	-56.98	265.13
7/12/2012	NORMAL	8,114.0	0.93	267.17	7,717.49	-1,421.20	-1,450.49	2,030.69	0.31	0.14	-18.48	287.51
	NORMAL	8,208.0	1.49	231.40	7,811.47	-1,422.00	-1,452.21	2,032.48	0.97	0.60	-38.05	287.76
	NORMAL	8,319.0	1.32	225.60	7,922.43	-1,423.79	-1,454.25	2,035.19	0.20	-0.15	-5.23	217.04
	NORMAL	8,384.0	1.22	222.20	7,987.42	-1,424.83	-1,455.25	2,036.63	0.19	-0.15	-5.23	215.31