

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	RWF 333-31	Wellbore No.	
Well Name	RWF 333-31	Common Name	RWF 333-31
Project	RU 31-06S-094W	Site	RWF 34-31 Pad
Vertical Section	14.81 (°)	North Reference	True
Azimuth		Origin E/W	
Origin N/S		UWI	RWF 333-31
Spud Date	12/9/2011		
Active Datum	KB @5,733.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SCIENTIFIC
Started	12/10/2011	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)	DLeg (°/100ft)	Bulld (°/100ft)	Turn (°/100ft)	TFace (°)
12/10/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/10/2011	NORMAL	178.0	2.55	10.81	177.98	1.76	-0.09	1.68	3.83	3.61	81.56	56.30
	NORMAL	268.0	5.28	351.65	267.76	7.82	-0.31	7.48	3.32	3.03	-21.29	324.62
	NORMAL	359.0	8.71	12.13	358.08	18.70	0.53	18.22	4.60	3.77	22.51	46.49
	NORMAL	450.0	11.35	17.05	447.69	34.01	4.60	34.05	3.05	2.90	5.41	20.42
	NORMAL	522.0	12.20	18.84	518.17	47.98	9.14	48.72	1.28	1.18	2.49	24.13
	NORMAL	612.0	13.63	16.27	605.89	67.16	15.18	68.81	1.71	1.59	-2.86	336.86
	NORMAL	703.0	14.56	16.84	694.15	88.40	21.50	90.96	1.03	1.02	0.63	8.77
	NORMAL	795.0	15.72	15.50	782.96	111.48	28.18	114.98	1.32	1.26	-1.46	342.56
	NORMAL	886.0	16.68	15.13	870.34	135.97	34.88	140.37	1.06	1.05	-0.41	353.68
	NORMAL	977.0	16.03	11.89	957.66	160.87	40.88	165.97	1.23	-0.71	-3.56	232.98
	NORMAL	1,073.0	14.47	16.77	1,050.28	185.33	47.07	191.20	2.10	-1.63	5.08	142.89
	NORMAL	1,123.0	14.66	17.91	1,098.68	197.33	50.82	203.76	0.69	0.38	2.28	57.02
	NORMAL	1,258.0	14.69	16.87	1,229.27	229.96	61.04	237.93	0.20	0.02	-0.77	275.99
	NORMAL	1,353.0	13.68	13.37	1,321.38	252.42	67.13	261.20	1.39	-1.06	-3.68	218.65
	NORMAL	1,448.0	14.80	13.93	1,413.46	275.13	72.65	284.56	1.19	1.18	0.59	7.28
	NORMAL	1,543.0	14.96	13.61	1,505.27	298.82	78.46	308.95	0.19	0.17	-0.34	332.66
	NORMAL	1,639.0	15.08	10.94	1,597.99	323.13	83.74	333.80	0.73	0.12	-2.78	278.55
	NORMAL	1,734.0	15.13	10.43	1,689.71	347.45	88.33	358.49	0.15	0.05	-0.54	290.37
	NORMAL	1,830.0	15.50	14.79	1,782.30	372.18	93.88	383.81	1.26	0.39	4.54	74.30
12/10/2011	NORMAL	117.0	0.35	321.06	117.00	0.28	-0.22	0.21	0.30	0.30	0.00	321.06

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (%/100ft)	Build (%/100ft)	Turn (%/100ft)	TFace (°)
12/11/2011	NORMAL	2,020.0	14.89	13.65	1,965.26	421.81	106.63	435.05	1.30	-1.27	-0.98	191.16
	NORMAL	2,116.0	14.87	12.95	2,058.04	445.80	112.30	459.70	0.19	-0.02	-0.73	263.31
	NORMAL	2,211.0	14.98	18.55	2,149.84	469.32	118.94	484.13	1.52	0.12	5.89	88.35
	NORMAL	2,306.0	15.43	20.54	2,241.52	492.80	127.28	508.96	0.73	0.47	2.09	50.20
	NORMAL	2,401.0	15.34	20.19	2,333.11	516.42	136.05	534.04	0.14	-0.09	-0.37	225.73
	NORMAL	2,495.0	15.63	19.17	2,423.70	540.06	144.50	559.05	0.42	0.31	-1.09	316.31
	NORMAL	2,590.0	15.92	20.47	2,515.12	564.35	153.26	584.78	0.48	0.31	1.37	51.26
	NORMAL	2,685.0	15.94	20.19	2,606.47	588.80	162.32	610.73	0.08	0.02	-0.29	284.45
	NORMAL	2,781.0	17.65	16.98	2,698.38	615.09	171.12	638.40	2.03	1.78	-3.34	329.98
	NORMAL	2,876.0	20.30	15.71	2,788.21	644.74	179.79	669.27	2.82	2.79	-1.34	350.54
	NORMAL	2,972.0	22.79	14.62	2,877.49	678.76	188.99	704.52	2.63	2.59	-1.14	350.36
	NORMAL	3,067.0	22.62	14.81	2,965.13	714.23	198.30	741.19	0.19	-0.18	0.20	156.75
	NORMAL	3,163.0	23.73	14.40	3,053.38	750.79	207.83	778.97	1.17	1.16	-0.43	351.54
	NORMAL	3,258.0	25.61	11.84	3,139.71	789.40	216.80	818.59	2.28	1.98	-2.69	329.22
	NORMAL	3,353.0	28.54	13.80	3,224.29	831.55	226.42	861.80	3.22	3.08	2.06	17.81
	NORMAL	3,448.0	31.47	15.03	3,306.55	877.55	238.27	909.30	3.15	3.08	1.29	12.39
	NORMAL	3,543.0	31.78	14.77	3,387.44	925.69	251.08	959.11	0.36	0.33	-0.27	336.15
	NORMAL	3,638.0	31.86	13.98	3,468.17	974.20	263.51	1,009.20	0.45	0.08	-0.83	280.54
	NORMAL	3,734.0	32.21	13.99	3,549.55	1,023.62	275.82	1,060.12	0.36	0.36	0.01	0.87
	NORMAL	3,829.0	30.00	12.35	3,630.89	1,071.39	287.02	1,109.17	2.49	-2.33	-1.73	200.28
	NORMAL	3,925.0	29.53	12.31	3,714.22	1,117.95	297.20	1,156.78	0.49	-0.49	-0.04	182.40
	NORMAL	4,020.0	29.49	12.81	3,796.90	1,163.63	307.37	1,203.54	0.26	-0.04	0.53	99.44
	NORMAL	4,115.0	29.37	12.12	3,879.64	1,209.20	317.45	1,250.18	0.38	-0.13	-0.73	250.21
	NORMAL	4,210.0	28.96	11.68	3,962.59	1,254.50	327.00	1,296.41	0.49	-0.43	-0.46	207.42
	NORMAL	4,305.0	28.51	14.49	4,045.90	1,298.98	337.33	1,342.05	1.50	-0.47	2.96	109.65
	NORMAL	4,401.0	28.25	14.30	4,130.36	1,343.18	348.67	1,387.68	0.29	-0.27	-0.20	199.07
	NORMAL	4,495.0	26.60	15.86	4,213.79	1,384.98	359.92	1,430.97	1.91	-1.76	1.66	157.16
	NORMAL	4,591.0	24.74	15.20	4,300.32	1,425.05	371.06	1,472.55	1.96	-1.94	-0.69	188.44
	NORMAL	4,686.0	23.59	15.99	4,386.99	1,462.50	381.51	1,511.44	1.26	-1.21	0.83	164.65
	NORMAL	4,781.0	21.49	14.82	4,474.73	1,497.60	391.20	1,547.85	2.26	-2.21	-1.23	191.52
12/11/2011	NORMAL	1,925.0	16.10	14.58	1,873.71	397.20	100.43	409.88	0.63	0.63	-0.22	354.46
12/12/2011	NORMAL	4,876.0	19.29	17.21	4,563.77	1,529.42	400.29	1,580.93	2.48	-2.32	2.52	160.38
	NORMAL	4,971.0	19.04	18.66	4,653.51	1,559.09	409.89	1,612.07	0.57	-0.26	1.53	118.39
	NORMAL	5,066.0	18.35	17.32	4,743.49	1,588.05	419.30	1,642.47	0.86	-0.73	-1.41	211.27
	NORMAL	5,161.0	17.90	17.16	4,833.78	1,616.27	428.06	1,672.00	0.48	-0.47	-0.17	186.24
	NORMAL	5,256.0	17.31	16.99	4,924.33	1,643.74	436.50	1,700.71	0.62	-0.62	-0.18	184.90
	NORMAL	5,351.0	15.05	14.18	5,015.56	1,669.22	443.65	1,727.17	2.52	-2.38	-2.96	197.76
	NORMAL	5,445.0	13.00	10.91	5,106.76	1,691.43	448.64	1,749.92	2.34	-2.18	-3.48	199.55
	NORMAL	5,540.0	9.63	9.28	5,199.90	1,709.77	451.95	1,768.50	3.56	-3.55	-1.72	184.62
	NORMAL	5,635.0	6.38	8.36	5,293.96	1,722.84	454.00	1,781.66	3.42	-3.42	-0.97	181.80
	NORMAL	5,730.0	5.23	11.02	5,388.47	1,732.31	455.59	1,791.22	1.24	-1.21	2.80	168.15
12/13/2011	NORMAL	5,826.0	4.41	10.82	5,484.13	1,740.28	456.86	1,799.25	0.85	-0.85	-0.21	181.07
	NORMAL	5,921.0	2.50	10.14	5,578.95	1,745.91	457.91	1,804.96	2.01	-2.01	-0.72	180.89
	NORMAL	6,016.0	2.18	10.25	5,673.87	1,749.73	458.60	1,808.82	0.34	-0.34	0.12	179.25
	NORMAL	6,112.0	2.06	17.32	5,769.81	1,753.17	459.43	1,812.37	0.30	-0.12	7.36	118.15
	NORMAL	6,207.0	1.96	18.97	5,864.75	1,756.34	460.47	1,815.69	0.12	-0.11	1.74	150.76
	NORMAL	6,303.0	1.92	17.76	5,960.70	1,759.42	461.49	1,818.94	0.06	-0.04	-1.26	225.08
	NORMAL	6,398.0	1.67	54.04	6,055.65	1,761.75	463.10	1,821.60	1.20	-0.26	38.19	120.13
12/14/2011	NORMAL	6,493.0	1.65	57.28	6,150.61	1,763.30	465.37	1,823.68	0.10	-0.02	3.41	103.65
	NORMAL	6,588.0	1.04	44.31	6,245.59	1,764.66	467.13	1,825.44	0.71	-0.64	-13.65	200.14
	NORMAL	6,683.0	0.72	44.64	6,340.57	1,765.70	468.15	1,826.71	0.34	-0.34	0.35	179.26
	NORMAL	6,778.0	0.81	48.93	6,435.57	1,766.57	469.07	1,827.78	0.11	0.09	4.52	34.63
	NORMAL	6,873.0	0.29	128.07	6,530.56	1,766.86	469.77	1,828.24	0.85	-0.55	83.31	159.34
	NORMAL	6,969.0	0.65	187.16	6,626.56	1,766.17	469.89	1,827.61	0.58	0.38	61.55	85.50
	NORMAL	7,064.0	0.50	207.73	6,721.55	1,765.27	469.63	1,826.67	0.27	-0.16	21.65	135.99
	NORMAL	7,159.0	0.45	220.05	6,816.55	1,764.62	469.20	1,825.93	0.12	-0.05	12.97	122.16
	NORMAL	7,255.0	0.50	200.53	6,912.55	1,763.94	468.81	1,825.17	0.18	0.05	-20.33	277.25

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
12/14/2011	NORMAL	7,350.0	0.60	187.63	7,007.54	1,763.05	468.60	1,824.26	0.17	0.11	-13.58	302.35
	NORMAL	7,445.0	0.51	187.48	7,102.54	1,762.14	468.48	1,823.35	0.09	-0.09	-0.16	180.85
12/15/2011	NORMAL	7,540.0	0.62	193.05	7,197.53	1,761.22	468.31	1,822.42	0.13	0.12	5.86	29.34
	NORMAL	7,636.0	0.85	183.53	7,293.53	1,760.01	468.14	1,821.20	0.27	0.24	-9.92	327.22
12/17/2011	NORMAL	7,731.0	0.90	198.39	7,388.52	1,758.59	467.87	1,819.76	0.24	0.05	15.64	85.07
	NORMAL	7,826.0	1.14	210.98	7,483.50	1,757.08	467.14	1,818.11	0.34	0.25	13.25	49.45
	NORMAL	7,922.0	1.03	216.07	7,579.48	1,755.56	466.14	1,816.39	0.15	-0.11	5.30	141.30
	NORMAL	8,017.0	0.44	245.76	7,674.48	1,754.72	465.31	1,815.37	0.72	-0.62	31.25	161.40
	NORMAL	8,113.0	0.48	276.80	7,770.47	1,754.62	464.57	1,815.08	0.26	0.04	32.33	96.62
	NORMAL	8,208.0	0.57	329.22	7,865.47	1,755.07	463.94	1,815.35	0.50	0.09	55.18	106.33
	NORMAL	8,304.0	0.61	5.83	7,961.46	1,755.99	463.74	1,816.19	0.39	0.04	38.14	102.45
	NORMAL	8,399.0	0.59	13.73	8,056.46	1,756.97	463.91	1,817.18	0.09	-0.02	8.32	107.52
	NORMAL	8,455.0	0.57	3.69	8,112.46	1,757.52	464.00	1,817.74	0.18	-0.04	-17.93	253.88
	NORMAL	8,510.0	0.57	3.69	8,167.45	1,758.07	464.03	1,818.28	0.00	0.00	0.00	0.00