

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 443-31	Wellbore No.	
Well Name	RWF 443-31	Common Name	RWF 443-31
Project	RU 31-06S-094W	Site	RWF 34-31 Pad
Vertical Section Azimuth	53.30 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	9/11/2011	UWI	RWF 443-31
Active Datum	KB @5,733.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Started	9/10/2011	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

6507

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Bulld (°/100ft)	Turn (°/100ft)	TFace (°)
9/10/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/10/2011	NORMAL	115.0	1.14	67.59	114.99	0.44	1.06	1.11	0.99	0.99	0.00	67.59
	NORMAL	175.0	3.78	59.33	174.93	1.67	3.31	3.65	4.43	4.40	-13.77	348.21
	NORMAL	245.0	5.36	54.55	244.71	4.75	7.96	9.22	2.32	2.26	-6.83	344.06
	NORMAL	336.0	6.84	51.84	335.19	10.56	15.68	18.89	1.66	1.63	-2.98	347.64
9/11/2011	NORMAL	427.0	7.46	47.19	425.48	17.92	24.28	30.18	0.93	0.68	-5.11	314.65
	NORMAL	517.0	8.90	50.50	514.57	26.32	33.94	42.94	1.68	1.60	3.68	19.75
	NORMAL	609.0	10.69	52.67	605.22	36.02	46.21	58.58	1.99	1.95	2.36	12.72
	NORMAL	700.0	14.22	54.49	694.07	47.64	62.03	78.20	3.90	3.88	2.00	7.24
	NORMAL	791.0	17.01	52.60	781.70	62.22	81.70	102.69	3.12	3.07	-2.08	348.75
	NORMAL	881.0	18.96	54.28	867.30	78.75	104.03	130.48	2.24	2.17	1.87	15.70
	NORMAL	973.0	21.19	54.91	953.70	97.04	129.78	162.04	2.44	2.42	0.68	5.84
	NORMAL	1,068.0	23.61	53.24	1,041.53	118.30	159.07	198.24	2.63	2.55	-1.76	344.49
	NORMAL	1,164.0	25.39	52.85	1,128.88	142.23	190.88	238.05	1.86	1.85	-0.41	354.63
	NORMAL	1,259.0	28.06	53.30	1,213.73	167.89	225.04	280.76	2.82	2.81	0.47	4.54
	NORMAL	1,355.0	30.35	53.18	1,297.52	195.92	262.56	327.60	2.39	2.39	-0.12	358.48
	NORMAL	1,450.0	31.69	53.78	1,378.93	225.05	301.91	376.56	1.45	1.41	0.63	13.25
9/12/2011	NORMAL	1,545.0	31.41	54.44	1,459.89	254.19	342.17	426.26	0.47	-0.29	0.69	129.32
	NORMAL	1,640.0	29.74	53.76	1,541.68	282.52	381.32	474.58	1.80	-1.76	-0.72	191.41
	NORMAL	1,736.0	30.19	54.10	1,624.84	310.75	420.08	522.52	0.50	0.47	0.35	20.82
	NORMAL	1,831.0	31.68	54.94	1,706.33	339.09	459.85	571.34	1.63	1.57	0.88	16.52

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 (°)
9/12/2011	NORMAL	1,927.0	30.77	53.76	1,788.42	368.09	500.29	621.10	1.14	-0.95	-1.23	213.41
	NORMAL	2,022.0	28.53	52.08	1,870.98	396.40	537.79	668.09	2.51	-2.36	-1.77	199.63
	NORMAL	2,118.0	28.14	52.69	1,955.48	424.21	573.88	713.64	0.51	-0.41	0.64	143.68
	NORMAL	2,213.0	27.84	52.11	2,039.36	451.41	609.21	758.22	0.43	-0.32	-0.61	221.96
	NORMAL	2,308.0	28.59	51.73	2,123.08	479.12	644.56	803.12	0.81	0.79	-0.40	346.36
	NORMAL	2,403.0	29.66	52.60	2,206.06	507.47	681.08	849.35	1.21	1.13	0.92	21.97
	NORMAL	2,497.0	28.99	52.73	2,288.02	535.39	717.69	895.39	0.72	-0.71	0.14	174.63
	NORMAL	2,592.0	28.76	52.27	2,371.21	563.32	754.08	941.26	0.34	-0.24	-0.48	223.80
	NORMAL	2,687.0	29.38	51.81	2,454.24	591.71	790.47	987.40	0.69	0.65	-0.48	339.98
9/14/2011	NORMAL	2,783.0	29.64	52.70	2,537.78	620.66	827.86	1,034.68	0.53	0.27	0.93	59.72
	NORMAL	2,878.0	30.98	56.87	2,619.81	648.26	867.03	1,082.58	2.63	1.41	4.39	59.33
	NORMAL	2,974.0	31.05	55.49	2,702.08	675.79	908.13	1,131.98	0.74	0.07	-1.44	275.03
	NORMAL	3,069.0	30.92	54.55	2,783.53	703.83	948.20	1,180.87	0.53	-0.14	-0.99	254.56
9/15/2011	NORMAL	3,165.0	30.88	53.42	2,865.90	732.81	988.07	1,230.16	0.61	-0.04	-1.18	265.57
	NORMAL	3,260.0	30.73	52.78	2,947.50	762.02	1,026.98	1,278.81	0.38	-0.16	-0.67	245.13
	NORMAL	3,354.0	30.82	52.00	3,028.26	791.38	1,065.08	1,326.90	0.44	0.10	-0.83	282.37
	NORMAL	3,449.0	30.64	51.23	3,109.92	821.52	1,103.13	1,375.42	0.46	-0.19	-0.81	245.09
	NORMAL	3,545.0	30.58	51.06	3,192.55	852.19	1,141.20	1,424.27	0.11	-0.06	-0.18	235.20
	NORMAL	3,640.0	30.15	50.42	3,274.51	882.57	1,178.38	1,472.25	0.57	-0.45	-0.67	216.68
	NORMAL	3,736.0	28.48	51.95	3,358.22	912.05	1,214.99	1,519.21	1.91	-1.74	1.59	156.51
	NORMAL	3,831.0	27.55	53.63	3,442.09	939.04	1,250.52	1,563.83	1.28	-0.98	1.77	140.42
	NORMAL	3,926.0	28.22	54.05	3,526.06	965.25	1,286.39	1,608.25	0.73	0.71	0.44	16.53
	NORMAL	4,021.0	27.90	55.82	3,609.89	990.92	1,322.96	1,652.92	0.94	-0.34	1.86	111.80
	NORMAL	4,117.0	29.13	57.90	3,694.25	1,015.96	1,361.34	1,698.65	1.65	1.28	2.17	39.83
	NORMAL	4,212.0	28.82	59.39	3,777.36	1,039.91	1,400.63	1,744.47	0.83	-0.33	1.57	113.89
	NORMAL	4,307.0	28.49	58.69	3,860.72	1,063.34	1,439.70	1,789.80	0.50	-0.35	-0.74	225.18
	NORMAL	4,402.0	28.79	55.88	3,944.10	1,087.95	1,478.00	1,835.21	1.45	0.32	-2.96	281.32
	NORMAL	4,497.0	30.27	52.58	4,026.76	1,115.33	1,515.96	1,882.01	2.31	1.56	-3.47	310.86
	NORMAL	4,592.0	30.47	52.43	4,108.73	1,144.57	1,554.06	1,930.03	0.23	0.21	-0.16	339.17
	NORMAL	4,687.0	30.01	51.39	4,190.80	1,174.08	1,591.72	1,977.86	0.73	-0.48	-1.09	228.26
	NORMAL	4,783.0	28.61	51.27	4,274.51	1,203.44	1,628.41	2,024.83	1.46	-1.46	-0.12	182.35
	NORMAL	4,877.0	25.23	51.76	4,358.31	1,229.93	1,661.71	2,067.36	3.60	-3.60	0.52	176.46
	NORMAL	4,973.0	23.40	51.18	4,445.79	1,254.55	1,692.64	2,106.87	1.92	-1.91	-0.60	187.17
	NORMAL	5,068.0	20.84	50.39	4,533.79	1,277.15	1,720.36	2,142.60	2.71	-2.69	-0.83	186.26
	NORMAL	5,162.0	18.77	51.80	4,622.23	1,297.17	1,745.13	2,174.42	2.26	-2.20	1.50	167.67
	NORMAL	5,257.0	17.29	52.28	4,712.56	1,315.26	1,768.31	2,203.82	1.57	-1.56	0.51	174.50
	NORMAL	5,353.0	15.26	52.15	4,804.71	1,331.74	1,789.57	2,230.71	2.11	-2.11	-0.14	180.97
9/16/2011	NORMAL	5,447.0	13.07	49.79	4,895.85	1,346.19	1,807.46	2,253.69	2.41	-2.33	-2.51	193.63
	NORMAL	5,542.0	11.85	46.04	4,988.61	1,359.90	1,822.68	2,274.09	1.54	-1.28	-3.95	211.73
	NORMAL	5,636.0	9.37	44.61	5,080.99	1,372.05	1,835.01	2,291.23	2.65	-2.64	-1.52	185.36
	NORMAL	5,732.0	7.07	42.19	5,176.00	1,381.99	1,844.46	2,304.76	2.42	-2.40	-2.52	187.36
	NORMAL	5,828.0	5.08	33.49	5,271.46	1,389.91	1,850.78	2,314.55	2.28	-2.07	-9.06	200.55
	NORMAL	5,923.0	3.79	33.81	5,366.17	1,396.03	1,854.85	2,321.47	1.36	-1.36	0.34	179.06
	NORMAL	6,018.0	2.29	41.37	5,461.04	1,400.06	1,857.85	2,326.29	1.63	-1.58	7.96	168.79
9/17/2011	NORMAL	6,114.0	1.09	66.97	5,556.99	1,401.86	1,859.96	2,329.05	1.45	-1.25	26.67	160.18
	NORMAL	6,209.0	0.43	146.73	5,651.99	1,401.91	1,860.98	2,329.91	1.16	-0.69	83.96	157.34
	NORMAL	6,305.0	0.27	190.49	5,747.99	1,401.39	1,861.14	2,329.72	0.31	-0.17	45.58	141.53
	NORMAL	6,400.0	0.62	164.00	5,842.98	1,400.68	1,861.24	2,329.38	0.42	0.37	-27.88	315.85
	NORMAL	6,494.0	0.72	137.88	5,936.98	1,399.75	1,861.78	2,329.25	0.34	0.11	-27.79	274.77
	NORMAL	6,589.0	0.86	113.65	6,031.97	1,399.02	1,862.83	2,329.66	0.38	0.15	-25.51	280.32
	NORMAL	6,685.0	0.88	87.01	6,127.96	1,398.77	1,864.23	2,330.63	0.42	0.02	-27.75	259.46
	NORMAL	6,780.0	0.60	101.67	6,222.95	1,398.71	1,865.44	2,331.57	0.35	-0.29	15.43	153.12
	NORMAL	6,875.0	0.60	135.25	6,317.94	1,398.25	1,866.28	2,331.97	0.36	0.00	35.35	106.79
9/18/2011	NORMAL	6,971.0	0.68	178.21	6,413.94	1,397.33	1,866.65	2,331.71	0.49	0.08	44.75	102.45
	NORMAL	7,066.0	0.47	197.72	6,508.93	1,396.39	1,866.55	2,331.07	0.30	-0.22	20.54	146.48
	NORMAL	7,161.0	0.70	192.61	6,603.93	1,395.46	1,866.30	2,330.32	0.25	0.24	-5.38	344.66
	NORMAL	7,257.0	0.64	210.50	6,699.92	1,394.42	1,865.90	2,329.38	0.23	-0.06	18.64	114.82

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 (°)
9/19/2011	NORMAL	7,352.0	0.99	177.38	6,794.91	1,393.14	1,865.67	2,328.43	0.60	0.37	-34.86	289.28
	NORMAL	7,447.0	1.07	173.02	6,889.90	1,391.44	1,865.82	2,327.53	0.12	0.08	-4.59	313.39
	NORMAL	7,542.0	1.05	157.67	6,984.88	1,389.76	1,866.26	2,326.87	0.30	-0.02	-16.16	258.32
	NORMAL	7,637.0	0.81	161.38	7,079.87	1,388.32	1,866.80	2,326.45	0.26	-0.25	3.91	167.77
	NORMAL	7,733.0	1.00	186.82	7,175.86	1,386.84	1,866.92	2,325.66	0.46	0.20	26.50	77.78
	NORMAL	7,828.0	1.17	217.16	7,270.84	1,385.25	1,866.23	2,324.16	0.62	0.18	31.94	89.05
9/20/2011	NORMAL	7,923.0	1.04	255.70	7,365.83	1,384.26	1,864.81	2,322.43	0.78	-0.14	40.57	118.82
	NORMAL	8,019.0	0.53	242.81	7,461.82	1,383.84	1,863.57	2,321.19	0.56	-0.53	-13.43	192.73
	NORMAL	8,114.0	0.34	224.16	7,556.81	1,383.44	1,862.99	2,320.47	0.25	-0.20	-19.63	207.61
	NORMAL	8,210.0	0.19	307.16	7,652.81	1,383.33	1,862.66	2,320.15	0.38	-0.16	86.46	149.24
	NORMAL	8,305.0	0.40	295.58	7,747.81	1,383.57	1,862.24	2,319.95	0.23	0.22	-12.19	338.31
9/21/2011	NORMAL	8,401.0	0.30	273.45	7,843.81	1,383.73	1,861.68	2,319.60	0.17	-0.10	-23.05	222.79
	NORMAL	8,496.0	0.61	260.98	7,938.81	1,383.66	1,860.94	2,318.97	0.34	0.33	-13.13	335.98
	NORMAL	8,592.0	0.72	281.40	8,034.80	1,383.70	1,859.84	2,318.11	0.27	0.11	21.27	75.54
	NORMAL	8,633.0	0.90	290.21	8,075.80	1,383.87	1,859.28	2,317.76	0.53	0.44	21.49	39.14
	NORMAL	8,700.0	0.90	290.21	8,142.79	1,384.23	1,858.30	2,317.19	0.00	0.00	0.00	0.00