

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 341-31	Wellbore No.	
Well Name	RWF 341-31	Common Name	RWF 341-31
Project	RU 32-06S-094W	Site	RWF 11-32 Pad
Vertical Section	280.48 (")	North Reference	True
Azimuth		Origin E/W	
Origin N/S		UWI	RWF 341-31
Spud Date	2/11/2012		
Active Datum	KB @5,565.2ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	2/11/2012	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

6104

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 (")
2/11/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/11/2012	NORMAL	86.0	0.09	267.98	86.00	0.00	-0.07	0.07	0.10	0.10	0.00	267.98
	NORMAL	176.0	1.32	292.32	175.99	0.39	-1.10	1.15	1.38	1.37	27.04	26.06
	NORMAL	267.0	3.52	289.95	266.90	1.74	-4.69	4.93	2.42	2.42	-2.60	356.21
	NORMAL	338.0	5.72	281.77	337.67	3.21	-10.21	10.62	3.23	3.10	-11.52	339.22
	NORMAL	429.0	9.15	288.67	427.89	6.45	-21.50	22.32	3.89	3.77	7.58	18.03
2/12/2012	NORMAL	519.0	11.87	280.49	516.38	10.42	-37.39	38.66	3.44	3.02	-9.09	327.19
	NORMAL	609.0	14.77	278.21	603.95	13.75	-57.85	59.39	3.27	3.22	-2.53	348.62
	NORMAL	700.0	17.85	276.54	691.28	16.99	-83.19	84.90	3.42	3.38	-1.84	350.54
	NORMAL	790.0	19.90	280.28	776.44	21.30	-111.97	113.98	2.64	2.28	4.16	32.33
	NORMAL	881.0	23.25	281.88	861.05	27.76	-144.80	147.43	3.74	3.68	1.76	10.71
	NORMAL	974.0	22.42	278.82	946.76	34.26	-180.29	183.51	1.56	-0.89	-3.29	233.65
	NORMAL	1,068.0	22.34	277.59	1,033.68	39.37	-215.71	219.27	0.51	-0.09	-1.31	259.74
2/13/2012	NORMAL	1,154.0	22.86	276.63	1,113.08	43.46	-248.50	252.26	0.74	0.60	-1.12	324.20
	NORMAL	1,248.0	22.14	278.25	1,199.93	48.11	-284.17	288.18	1.01	-0.77	1.72	140.02
	NORMAL	1,342.0	21.63	280.75	1,287.15	53.88	-318.72	323.20	1.13	-0.54	2.66	119.85
	NORMAL	1,436.0	21.63	281.46	1,374.53	60.55	-352.72	357.85	0.28	0.00	0.76	90.33
	NORMAL	1,530.0	20.84	281.72	1,462.15	67.39	-386.07	391.89	0.85	-0.84	0.28	173.32
	NORMAL	1,625.0	21.98	284.54	1,550.60	75.29	-419.83	426.52	1.62	1.20	2.97	43.40
	NORMAL	1,719.0	22.42	281.37	1,637.63	83.24	-454.43	461.99	1.36	0.47	-3.37	288.70
	NORMAL	1,812.0	21.46	280.85	1,723.89	89.94	-488.53	496.74	1.05	-1.03	-0.56	191.20

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 (°)
2/13/2012	NORMAL	1,905.0	20.66	280.93	1,810.68	96.25	-521.35	530.16	0.86	-0.86	0.09	177.98
	NORMAL	1,999.0	19.73	281.01	1,898.90	102.43	-553.20	562.61	0.99	-0.99	0.09	178.34
	NORMAL	2,094.0	20.49	283.66	1,988.11	109.42	-585.10	595.24	1.25	0.80	2.79	51.42
	NORMAL	2,187.0	21.02	285.42	2,075.08	117.69	-617.00	628.11	0.88	0.57	1.89	50.47
	NORMAL	2,281.0	22.25	285.33	2,162.45	126.88	-650.41	662.64	1.31	1.31	-0.10	358.41
	NORMAL	2,375.0	23.13	283.92	2,249.18	136.03	-685.50	698.81	1.10	0.94	-1.50	327.63
	NORMAL	2,468.0	23.65	278.21	2,334.55	143.09	-721.69	735.68	2.50	0.56	-6.14	280.29
	NORMAL	2,562.0	22.07	272.85	2,421.17	146.66	-758.00	772.03	2.78	-1.68	-5.70	230.36
	NORMAL	2,656.0	21.28	275.92	2,508.53	149.30	-792.61	806.54	1.47	-0.84	3.27	126.29
	NORMAL	2,750.0	20.71	275.76	2,596.28	152.72	-826.11	840.11	0.61	-0.61	-0.17	185.67
	NORMAL	2,846.0	21.46	277.68	2,685.86	156.78	-860.40	874.57	1.06	0.78	2.00	43.54
2/14/2012	NORMAL	2,940.0	21.98	279.18	2,773.18	161.88	-894.81	909.33	0.81	0.55	1.60	47.57
	NORMAL	3,034.0	21.37	278.65	2,860.54	167.26	-929.11	944.03	0.68	-0.65	-0.56	197.55
	NORMAL	3,126.0	22.34	280.05	2,945.92	172.83	-962.90	978.27	1.20	1.05	1.52	28.90
	NORMAL	3,220.0	22.34	279.18	3,032.87	178.80	-998.12	1,014.00	0.35	0.00	-0.93	269.60
	NORMAL	3,315.0	22.77	281.81	3,120.61	185.45	-1,033.94	1,050.43	1.15	0.45	2.77	68.13
	NORMAL	3,410.0	22.77	282.25	3,208.20	193.11	-1,069.90	1,087.18	0.18	0.00	0.46	90.20
	NORMAL	3,504.0	22.59	282.25	3,294.93	200.80	-1,105.32	1,123.41	0.19	-0.19	0.00	180.00
	NORMAL	3,598.0	23.01	281.15	3,381.59	208.18	-1,140.99	1,159.82	0.64	0.45	-1.17	314.07
	NORMAL	3,692.0	23.83	280.85	3,467.84	215.31	-1,177.67	1,197.18	0.88	0.87	-0.32	351.59
	NORMAL	3,785.0	22.77	282.43	3,553.26	222.72	-1,213.69	1,233.96	1.32	-1.14	1.70	150.20
	NORMAL	3,879.0	21.37	281.46	3,640.37	230.04	-1,248.25	1,269.27	1.54	-1.49	-1.03	194.14
	NORMAL	3,974.0	20.84	282.43	3,729.00	237.12	-1,281.71	1,303.46	0.67	-0.56	1.02	147.07
	NORMAL	4,067.0	19.79	281.11	3,816.21	243.71	-1,313.32	1,335.74	1.23	-1.13	-1.42	202.96
	NORMAL	4,160.0	19.87	281.11	3,903.70	249.79	-1,344.27	1,367.28	0.09	0.09	0.00	0.00
	NORMAL	4,254.0	18.91	281.64	3,992.36	255.94	-1,374.87	1,398.49	1.04	-1.02	0.56	169.86
	NORMAL	4,348.0	18.79	281.28	4,081.32	261.97	-1,404.63	1,428.85	0.18	-0.13	-0.38	223.94
	NORMAL	4,442.0	18.55	280.14	4,170.38	267.57	-1,434.20	1,458.94	0.46	-0.26	-1.21	236.13
2/15/2012	NORMAL	4,536.0	17.15	280.67	4,259.85	272.77	-1,462.54	1,487.76	1.50	-1.49	0.56	173.63
	NORMAL	4,629.0	15.27	280.71	4,349.15	277.58	-1,488.05	1,513.72	2.02	-2.02	0.04	179.68
	NORMAL	4,723.0	14.95	280.05	4,439.90	282.00	-1,512.15	1,538.22	0.39	-0.34	-0.70	207.95
	NORMAL	4,818.0	13.72	280.32	4,531.94	286.16	-1,535.30	1,561.74	1.30	-1.29	0.28	177.02
	NORMAL	4,912.0	12.22	281.20	4,623.54	290.08	-1,556.03	1,582.83	1.61	-1.60	0.94	172.93
	NORMAL	5,007.0	11.96	281.64	4,716.43	294.02	-1,575.53	1,602.73	0.29	-0.27	0.46	160.70
	NORMAL	5,101.0	11.70	280.58	4,808.43	297.74	-1,594.44	1,622.00	0.36	-0.28	-1.13	219.37
	NORMAL	5,195.0	9.41	281.20	4,900.84	300.98	-1,611.35	1,639.22	2.44	-2.44	0.66	177.47
	NORMAL	5,290.0	8.00	282.69	4,994.74	303.94	-1,625.42	1,653.59	1.50	-1.48	1.57	171.65
	NORMAL	5,381.0	6.86	281.02	5,084.98	306.37	-1,636.93	1,665.35	1.27	-1.25	-1.84	189.90
2/16/2012	NORMAL	5,476.0	6.68	281.55	5,179.31	308.56	-1,647.91	1,676.55	0.20	-0.19	0.56	161.12
	NORMAL	5,569.0	6.42	278.30	5,271.71	310.40	-1,658.36	1,687.15	0.49	-0.28	-3.49	233.35
	NORMAL	5,662.0	5.10	275.75	5,364.23	311.56	-1,667.61	1,696.47	1.45	-1.42	-2.74	189.71
	NORMAL	5,756.0	4.13	272.76	5,457.93	312.14	-1,675.15	1,703.99	1.06	-1.03	-3.18	192.44
	NORMAL	5,850.0	3.52	276.98	5,551.72	312.66	-1,681.40	1,710.22	0.71	-0.65	4.49	157.32
	NORMAL	5,944.0	2.37	292.62	5,645.60	313.76	-1,686.06	1,715.00	1.48	-1.22	16.64	152.70
	NORMAL	6,038.0	1.85	303.35	5,739.53	315.34	-1,689.12	1,718.30	0.69	-0.55	11.41	148.06
	NORMAL	6,132.0	1.49	319.25	5,833.49	317.10	-1,691.18	1,720.65	0.62	-0.38	16.91	135.61
2/17/2012	NORMAL	6,226.0	1.31	322.80	5,927.46	318.88	-1,692.63	1,722.40	0.21	-0.19	3.78	156.04
	NORMAL	6,320.0	1.58	320.58	6,021.43	320.74	-1,694.10	1,724.18	0.29	0.29	-2.36	347.18
	NORMAL	6,414.0	1.14	306.51	6,115.41	322.29	-1,695.68	1,726.01	0.58	-0.47	-14.97	210.30
	NORMAL	6,509.0	0.26	188.91	6,210.40	322.64	-1,696.47	1,726.86	1.35	-0.93	-123.79	190.36
	NORMAL	6,603.0	0.63	174.34	6,304.40	321.92	-1,696.45	1,726.71	0.41	0.39	-15.50	335.62
	NORMAL	6,696.0	0.79	178.28	6,397.39	320.77	-1,696.38	1,726.43	0.18	0.17	4.24	18.95
	NORMAL	6,789.0	0.97	202.18	6,490.38	319.40	-1,696.66	1,726.45	0.44	0.19	25.70	76.16
	NORMAL	6,882.0	1.32	224.31	6,583.36	317.90	-1,697.71	1,727.21	0.60	0.38	23.80	63.05
	NORMAL	6,976.0	1.32	228.46	6,677.34	316.41	-1,699.27	1,728.48	0.10	0.00	4.41	92.07
	NORMAL	7,070.0	1.06	221.96	6,771.32	315.05	-1,700.67	1,729.60	0.31	-0.28	-6.91	204.21
2/18/2012	NORMAL	7,165.0	1.23	207.37	6,866.30	313.49	-1,701.72	1,730.35	0.35	0.18	-15.36	292.82

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 (")
2/18/2012	NORMAL	7,259.0	0.79	202.71	6,960.28	311.99	-1,702.44	1,730.79	0.48	-0.47	-4.96	188.25
	NORMAL	7,351.0	0.79	118.16	7,052.28	311.11	-1,702.12	1,730.32	1.16	0.00	-91.90	227.73
	NORMAL	7,445.0	1.93	84.76	7,146.25	310.95	-1,699.97	1,728.17	1.43	1.21	-35.53	307.71
	NORMAL	7,539.0	2.55	79.58	7,240.18	311.47	-1,696.34	1,724.70	0.69	0.66	-5.51	339.32
2/19/2012	NORMAL	7,632.0	2.71	66.54	7,333.08	312.72	-1,692.29	1,720.94	0.66	0.17	-14.02	278.40
	NORMAL	7,727.0	2.33	63.41	7,427.99	314.48	-1,688.50	1,717.54	0.43	-0.40	-3.29	198.35
	NORMAL	7,820.0	1.67	73.16	7,520.93	315.72	-1,685.51	1,714.82	0.80	-0.71	10.48	157.54
	NORMAL	7,914.0	1.41	62.26	7,614.90	316.65	-1,683.18	1,712.70	0.42	-0.28	-11.60	223.05
	NORMAL	8,008.0	1.67	45.65	7,708.86	318.15	-1,681.18	1,711.00	0.55	0.28	-17.67	291.74
2/20/2012	NORMAL	8,102.0	1.23	22.10	7,802.84	320.04	-1,679.82	1,710.01	0.78	-0.47	-25.05	222.18
	NORMAL	8,195.0	1.32	6.45	7,895.81	322.03	-1,679.32	1,709.88	0.39	0.10	-16.83	276.58
	NORMAL	8,275.0	1.32	6.45	7,975.79	323.86	-1,679.11	1,710.01	0.00	0.00	0.00	0.00