

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 411-32	Wellbore No.	1
Well Name	RWF 411-32	Common Name	RWF 411-32
Project	RU 32-06S-094W	Site	RWF 11-32 Pad
Vertical Section Azimuth	262.89 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	7/23/2012	UWI	RWF 411-32
Active Datum	KB @5,560.2ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	7/23/2012	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

5790

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 (°)
7/23/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/23/2012	NORMAL	103.0	0.18	266.31	103.00	-0.01	-0.16	0.16	0.17	0.17	0.00	266.31
	NORMAL	164.0	1.50	265.52	163.99	-0.08	-1.05	1.05	2.16	2.16	-1.30	359.10
	NORMAL	254.0	2.46	264.02	253.94	-0.37	-4.15	4.16	1.07	1.07	-1.67	356.16
	NORMAL	344.0	5.01	267.63	343.74	-0.74	-10.00	10.01	2.84	2.83	4.01	7.07
	NORMAL	434.0	8.27	263.41	433.12	-1.64	-20.36	20.40	3.66	3.62	-4.69	349.39
	NORMAL	525.0	10.65	261.04	522.88	-3.70	-35.17	35.35	2.65	2.62	-2.60	349.53
	NORMAL	615.0	12.67	260.68	611.02	-6.60	-53.12	53.53	2.25	2.24	-0.40	357.76
7/24/2012	NORMAL	686.0	14.47	261.68	680.03	-9.14	-69.58	70.18	2.56	2.54	1.41	7.91
	NORMAL	777.0	14.58	260.50	768.12	-12.68	-92.13	92.99	0.35	0.12	-1.30	289.82
	NORMAL	868.0	12.11	261.73	856.66	-15.94	-112.88	113.98	2.73	-2.71	1.35	174.04
	NORMAL	959.0	12.12	261.39	945.63	-18.74	-131.77	133.08	0.08	0.01	-0.37	277.81
	NORMAL	1,053.0	13.45	261.54	1,037.30	-21.83	-152.34	153.87	1.42	1.41	0.16	1.50
	NORMAL	1,090.0	13.92	260.96	1,073.25	-23.16	-160.99	162.62	1.32	1.27	-1.57	343.44
7/25/2012	NORMAL	1,178.0	14.71	260.25	1,158.52	-26.72	-182.46	184.36	0.92	0.90	-0.81	347.13
	NORMAL	1,240.0	14.88	262.40	1,218.46	-29.10	-198.11	200.18	0.93	0.27	3.47	73.84
	NORMAL	1,334.0	14.30	263.73	1,309.43	-31.97	-221.61	223.86	0.71	-0.62	1.41	150.63
	NORMAL	1,428.0	14.34	264.83	1,400.51	-34.28	-244.74	247.10	0.29	0.04	1.17	82.17
	NORMAL	1,522.0	13.65	265.16	1,491.72	-36.27	-267.39	269.82	0.74	-0.73	0.35	173.56
	NORMAL	1,616.0	13.26	265.48	1,583.14	-38.05	-289.19	291.67	0.42	-0.41	0.34	169.35
	NORMAL	1,709.0	14.31	263.52	1,673.46	-40.19	-311.24	313.82	1.24	1.13	-2.11	335.07

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 (°)
7/25/2012	NORMAL	1,803.0	14.22	263.06	1,764.56	-42.90	-334.24	336.98	0.15	-0.10	-0.49	231.33
	NORMAL	1,897.0	13.68	262.63	1,855.79	-45.72	-356.73	359.64	0.58	-0.57	-0.46	190.66
	NORMAL	1,991.0	14.63	263.43	1,946.94	-48.50	-379.54	382.63	1.03	1.01	0.85	12.02
	NORMAL	2,085.0	14.25	263.63	2,037.97	-51.15	-402.84	406.07	0.41	-0.40	0.21	172.62
	NORMAL	2,178.0	13.85	262.31	2,128.18	-53.90	-425.24	428.64	0.55	-0.43	-1.42	218.06
	NORMAL	2,273.0	13.81	261.49	2,220.43	-57.10	-447.72	451.35	0.21	-0.04	-0.86	258.07
	NORMAL	2,367.0	13.58	259.11	2,311.76	-60.85	-469.66	473.58	0.65	-0.24	-2.53	246.64
	NORMAL	2,460.0	13.61	259.56	2,402.15	-64.89	-491.14	495.39	0.12	0.03	0.48	74.38
	NORMAL	2,553.0	13.37	258.11	2,492.59	-69.09	-512.42	517.03	0.45	-0.26	-1.56	233.94
	NORMAL	2,647.0	13.60	264.60	2,584.00	-72.37	-534.06	538.91	1.63	0.24	6.90	84.52
	NORMAL	2,741.0	13.25	264.49	2,675.43	-74.45	-555.79	560.73	0.37	-0.37	-0.12	184.12
	NORMAL	2,833.0	14.07	266.52	2,764.83	-76.14	-577.44	582.43	1.03	0.89	2.21	31.30
7/26/2012	NORMAL	2,927.0	13.88	265.88	2,856.05	-77.64	-600.09	605.09	0.26	-0.20	-0.68	218.82
	NORMAL	3,020.0	14.79	264.12	2,946.15	-79.66	-623.03	628.10	1.08	0.98	-1.89	333.56
	NORMAL	3,114.0	14.83	264.07	3,037.03	-82.13	-646.93	652.12	0.04	0.04	-0.05	342.26
	NORMAL	3,208.0	14.19	263.39	3,128.03	-84.70	-670.34	675.67	0.70	-0.68	-0.72	194.58
	NORMAL	3,302.0	13.63	263.12	3,219.27	-87.35	-692.78	698.27	0.60	-0.60	-0.29	186.48
	NORMAL	3,395.0	13.39	264.27	3,309.70	-89.74	-714.37	719.99	0.39	-0.26	1.24	132.33
	NORMAL	3,488.0	12.98	262.81	3,400.25	-92.12	-735.45	741.20	0.57	-0.44	-1.57	218.38
	NORMAL	3,583.0	14.16	263.97	3,492.59	-94.68	-757.59	763.49	1.27	1.24	1.22	13.55
	NORMAL	3,677.0	14.77	265.05	3,583.61	-96.92	-780.96	786.96	0.71	0.65	1.15	24.38
	NORMAL	3,770.0	14.19	264.44	3,673.66	-99.05	-804.12	810.20	0.64	-0.62	-0.66	194.44
	NORMAL	3,864.0	13.87	264.89	3,764.85	-101.17	-826.81	832.97	0.36	-0.34	0.48	161.39
	NORMAL	3,958.0	14.80	264.30	3,855.93	-103.36	-849.98	856.24	1.00	0.99	-0.63	350.79
7/27/2012	NORMAL	4,052.0	14.24	264.28	3,946.92	-105.71	-873.43	879.80	0.60	-0.60	-0.02	180.50
	NORMAL	4,146.0	13.95	263.45	4,038.09	-108.15	-896.19	902.69	0.38	-0.31	-0.88	214.47
	NORMAL	4,239.0	14.07	262.77	4,128.33	-110.86	-918.54	925.20	0.22	0.13	-0.73	305.76
	NORMAL	4,333.0	13.94	262.96	4,219.53	-113.68	-941.11	947.95	0.15	-0.14	0.20	160.61
	NORMAL	4,427.0	13.80	262.14	4,310.79	-116.60	-963.46	970.48	0.26	-0.15	-0.87	234.14
	NORMAL	4,521.0	13.33	261.54	4,402.17	-119.73	-985.28	992.52	0.52	-0.50	-0.64	196.38
	NORMAL	4,614.0	12.56	262.53	4,492.81	-122.62	-1,005.91	1,013.35	0.86	-0.83	1.06	164.41
	NORMAL	4,706.0	11.46	263.59	4,582.79	-124.94	-1,024.91	1,032.50	1.22	-1.20	1.15	169.18
	NORMAL	4,800.0	9.68	265.59	4,675.19	-126.59	-1,042.07	1,049.73	1.93	-1.89	2.13	169.34
	NORMAL	4,892.0	9.15	264.53	4,765.95	-127.88	-1,057.07	1,064.77	0.61	-0.58	-1.15	197.59
	NORMAL	4,987.0	8.40	264.43	4,859.84	-129.28	-1,071.49	1,079.25	0.79	-0.79	-0.11	181.12
	NORMAL	5,081.0	7.03	263.47	4,952.99	-130.60	-1,084.04	1,091.87	1.46	-1.46	-1.02	184.90
7/28/2012	NORMAL	5,175.0	6.51	263.57	5,046.33	-131.85	-1,095.05	1,102.95	0.55	-0.55	0.11	178.75
	NORMAL	5,268.0	5.79	259.52	5,138.80	-133.29	-1,104.90	1,112.91	0.90	-0.77	-4.35	209.07
	NORMAL	5,364.0	4.43	255.33	5,234.41	-135.11	-1,113.25	1,121.42	1.47	-1.42	-4.36	193.26
	NORMAL	5,459.0	3.54	254.35	5,329.18	-136.83	-1,119.63	1,127.95	0.94	-0.94	-1.03	183.89
	NORMAL	5,554.0	2.39	267.69	5,424.06	-137.70	-1,124.43	1,132.83	1.40	-1.21	14.04	155.58
	NORMAL	5,648.0	1.85	248.09	5,517.99	-138.35	-1,127.80	1,136.25	0.95	-0.57	-20.85	223.80
	NORMAL	5,744.0	1.88	245.29	5,613.94	-139.59	-1,130.66	1,139.25	0.10	0.03	-2.92	286.82
	NORMAL	5,840.0	1.89	244.77	5,709.89	-140.92	-1,133.53	1,142.25	0.02	0.01	-0.54	300.05
	NORMAL	5,936.0	0.53	242.73	5,805.87	-141.80	-1,135.35	1,144.17	1.42	-1.42	-2.13	180.79
	NORMAL	6,032.0	0.35	198.43	5,901.86	-142.28	-1,135.84	1,144.72	0.39	-0.19	-46.15	221.17
	NORMAL	6,128.0	0.53	227.96	5,997.86	-142.85	-1,136.26	1,145.21	0.30	0.19	30.76	66.95
	NORMAL	6,223.0	0.53	212.14	6,092.86	-143.52	-1,136.82	1,145.85	0.15	0.00	-16.65	262.09
7/29/2012	NORMAL	6,319.0	0.44	233.76	6,188.85	-144.11	-1,137.36	1,146.45	0.21	-0.09	22.52	126.73
	NORMAL	6,416.0	0.35	253.80	6,285.85	-144.42	-1,137.94	1,147.07	0.17	-0.09	20.66	132.83
	NORMAL	6,512.0	0.44	233.41	6,381.85	-144.72	-1,138.52	1,147.68	0.17	0.09	-21.24	292.16
	NORMAL	6,607.0	0.62	222.95	6,476.84	-145.31	-1,139.16	1,148.39	0.21	0.19	-11.01	326.44
	NORMAL	6,702.0	0.97	206.61	6,571.83	-146.41	-1,139.87	1,149.23	0.44	0.37	-17.20	318.72
	NORMAL	6,796.0	0.18	258.99	6,665.83	-147.15	-1,140.37	1,149.82	0.93	-0.84	55.72	170.59
	NORMAL	6,891.0	0.44	347.67	6,760.83	-146.82	-1,140.60	1,150.00	0.50	0.27	93.35	111.11
	NORMAL	6,986.0	0.18	286.67	6,855.83	-146.42	-1,140.82	1,150.17	0.41	-0.27	-64.21	204.05
	NORMAL	7,080.0	0.18	288.43	6,949.83	-146.33	-1,141.10	1,150.44	0.01	0.00	1.87	90.88

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 (°)
7/29/2012	NORMAL	7,174.0	0.09	325.17	7,043.83	-146.22	-1,141.28	1,150.61	0.13	-0.10	39.09	153.48
7/30/2012	NORMAL	7,267.0	0.53	34.08	7,136.82	-145.81	-1,141.08	1,150.36	0.54	0.47	74.10	78.49
	NORMAL	7,361.0	0.26	39.88	7,230.82	-145.28	-1,140.70	1,149.91	0.29	-0.29	6.17	174.47
	NORMAL	7,456.0	0.79	35.04	7,325.82	-144.58	-1,140.19	1,149.32	0.56	0.56	-5.09	352.79
	NORMAL	7,549.0	0.88	55.26	7,418.81	-143.65	-1,139.23	1,148.25	0.33	0.10	21.74	83.29
	NORMAL	7,644.0	0.97	64.66	7,513.80	-142.89	-1,137.91	1,146.84	0.19	0.09	9.89	64.08
	NORMAL	7,738.0	1.06	73.19	7,607.78	-142.30	-1,136.36	1,145.23	0.19	0.10	9.07	63.53
	NORMAL	7,832.0	1.14	83.73	7,701.76	-141.95	-1,134.59	1,143.44	0.23	0.09	11.21	73.75
7/31/2012	NORMAL	7,926.0	1.41	62.64	7,795.74	-141.31	-1,132.64	1,141.42	0.57	0.29	-22.44	289.09
	NORMAL	8,011.0	1.49	68.79	7,880.71	-140.43	-1,130.68	1,139.37	0.21	0.09	7.24	65.89
	NORMAL	8,076.0	1.55	73.49	7,945.69	-139.88	-1,129.05	1,137.68	0.21	0.09	7.23	66.66