

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 322-32	Wellbore No.	OH
Well Name	RWF 322-32	Common Name	RWF 322-32
Project	RU 32-06S-094W	Site	RWF 11-32 Pad
Vertical Section Azimuth	150.46 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	12/6/2011	UWI	RWF 322-32
Active Datum	KB @5,561.2ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SCIENTIFIC
Date Started	12/6/2011	Ended	12/13/2011
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

5918

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 (°)
12/6/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/6/2011	NORMAL	93.0	0.79	154.86	93.00	-0.58	0.27	0.64	0.85	0.85	0.00	154.86
	NORMAL	176.0	2.20	151.79	175.97	-2.50	1.27	2.80	1.70	1.70	-3.70	355.21
	NORMAL	267.0	2.82	150.38	266.88	-5.99	3.20	6.79	0.68	0.68	-1.55	353.61
	NORMAL	342.0	5.01	145.07	341.70	-10.28	5.99	11.89	2.96	2.92	-7.08	347.94
	NORMAL	432.0	7.83	155.62	431.13	-19.08	10.77	21.91	3.38	3.13	11.72	28.00
	NORMAL	523.0	9.15	156.76	521.13	-31.38	16.18	35.28	1.46	1.45	1.25	7.83
	NORMAL	613.0	8.79	148.50	610.03	-43.82	22.60	49.27	1.48	-0.40	-9.18	250.33
	NORMAL	703.0	9.96	147.27	698.83	-56.23	30.40	63.91	1.32	1.30	-1.37	349.68
	NORMAL	794.0	8.51	156.59	788.65	-69.03	37.33	78.46	2.28	-1.59	10.24	138.65
12/7/2011	NORMAL	885.0	9.06	158.87	878.58	-81.89	42.59	92.25	0.72	0.60	2.51	33.47
	NORMAL	977.0	9.70	151.30	969.36	-95.45	48.92	107.16	1.51	0.70	-8.23	293.65
	NORMAL	1,069.0	10.73	151.14	1,059.90	-109.75	56.78	123.48	1.12	1.12	-0.17	358.34
	NORMAL	1,111.0	11.34	150.79	1,101.12	-116.78	60.68	131.51	1.46	1.45	-0.83	353.56
12/8/2011	NORMAL	1,253.0	12.31	149.56	1,240.11	-142.01	75.17	160.61	0.71	0.68	-0.87	344.83
	NORMAL	1,347.0	11.87	147.45	1,332.02	-158.80	85.44	180.29	0.66	-0.47	-2.24	224.10
	NORMAL	1,440.0	11.08	147.18	1,423.16	-174.37	95.43	198.76	0.85	-0.85	-0.29	183.76
	NORMAL	1,534.0	8.97	148.24	1,515.72	-188.20	104.19	215.10	2.25	-2.24	1.13	175.52
	NORMAL	1,629.0	6.16	144.11	1,609.89	-198.63	111.07	227.57	3.01	-2.96	-4.35	188.91
	NORMAL	1,723.0	6.16	144.55	1,703.34	-206.82	116.96	237.60	0.05	0.00	0.47	90.22
	NORMAL	1,816.0	5.98	143.05	1,795.82	-214.76	122.76	247.37	0.26	-0.19	-1.61	220.64

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 (°)
12/8/2011	NORMAL	1,909.0	6.95	149.38	1,888.23	-223.47	128.54	257.80	1.29	1.04	6.81	39.48
	NORMAL	2,003.0	6.60	148.24	1,981.57	-232.96	134.28	268.88	0.40	-0.37	-1.21	200.45
	NORMAL	2,098.0	7.12	150.26	2,075.89	-242.71	140.08	280.22	0.60	0.55	2.13	25.90
	NORMAL	2,191.0	6.86	148.41	2,168.20	-252.45	145.84	291.54	0.37	-0.28	-1.99	219.97
	NORMAL	2,285.0	7.47	146.57	2,261.47	-262.33	152.15	303.24	0.69	0.65	-1.96	338.47
	NORMAL	2,379.0	8.00	151.23	2,354.61	-273.16	158.67	315.88	0.87	0.56	4.96	52.13
	NORMAL	2,472.0	9.15	150.44	2,446.57	-285.27	165.43	329.75	1.24	1.24	-0.85	353.76
	NORMAL	2,567.0	8.88	149.73	2,540.40	-298.17	172.85	344.63	0.31	-0.28	-0.75	202.04
	NORMAL	2,661.0	8.35	150.26	2,633.34	-310.36	179.89	358.71	0.57	-0.56	0.56	171.74
	NORMAL	2,755.0	9.32	149.91	2,726.22	-322.87	187.10	373.15	1.03	1.03	-0.37	356.66
	NORMAL	2,850.0	8.88	149.21	2,820.03	-335.83	194.71	388.17	0.48	-0.46	-0.74	193.78
	NORMAL	2,944.0	8.62	148.33	2,912.93	-348.06	202.12	402.46	0.31	-0.28	-0.94	206.81
	NORMAL	3,038.0	8.09	148.59	3,005.93	-359.70	209.26	416.11	0.57	-0.56	0.28	176.05
	NORMAL	3,131.0	8.35	149.29	3,097.98	-371.09	216.12	429.41	0.30	0.28	0.75	21.40
	NORMAL	3,225.0	8.00	148.68	3,191.02	-382.54	223.01	442.77	0.38	-0.37	-0.65	193.62
	NORMAL	3,320.0	8.71	152.19	3,285.01	-394.55	229.80	456.57	0.92	0.75	3.69	37.44
	NORMAL	3,414.0	8.35	151.05	3,377.98	-406.82	236.43	470.51	0.42	-0.38	-1.21	204.60
	NORMAL	3,508.0	7.91	150.61	3,471.03	-418.43	242.90	483.80	0.47	-0.47	-0.47	187.83
	NORMAL	3,602.0	8.62	153.69	3,564.05	-430.38	249.20	497.30	0.89	0.76	3.28	33.48
	NORMAL	3,696.0	8.53	154.13	3,657.00	-442.97	255.36	511.29	0.12	-0.10	0.47	144.13
	NORMAL	3,790.0	9.15	152.90	3,749.89	-455.89	261.81	525.71	0.69	0.66	-1.31	342.44
	NORMAL	3,884.0	9.58	150.96	3,842.63	-469.39	269.01	541.00	0.57	0.46	-2.06	322.76
12/9/2011	NORMAL	3,978.0	10.02	147.62	3,935.26	-483.13	277.19	556.99	0.76	0.47	-3.55	306.09
	NORMAL	4,071.0	9.32	150.44	4,026.94	-496.51	285.24	572.60	0.91	-0.75	3.03	147.30
	NORMAL	4,164.0	9.58	150.52	4,118.68	-509.80	292.76	587.87	0.28	0.28	0.09	2.93
	NORMAL	4,259.0	9.41	153.42	4,212.38	-523.63	300.13	603.53	0.53	-0.18	3.05	110.99
	NORMAL	4,352.0	8.71	149.12	4,304.22	-536.47	307.14	618.17	1.05	-0.75	-4.62	221.94
	NORMAL	4,446.0	9.50	146.22	4,397.03	-549.03	315.11	633.02	0.97	0.84	-3.09	328.41
	NORMAL	4,540.0	9.23	141.56	4,489.78	-561.38	324.11	648.20	0.86	-0.29	-4.96	248.11
	NORMAL	4,633.0	8.18	148.33	4,581.71	-572.85	332.22	662.18	1.58	-1.13	7.28	139.01
	NORMAL	4,727.0	7.30	149.82	4,674.85	-583.71	338.73	674.84	0.96	-0.94	1.59	167.89
	NORMAL	4,822.0	6.07	145.60	4,769.21	-593.07	344.60	685.88	1.39	-1.29	-4.44	199.68
12/10/2011	NORMAL	4,916.0	4.92	137.43	4,862.77	-600.14	350.14	694.76	1.48	-1.22	-8.69	210.21
	NORMAL	5,011.0	4.84	140.59	4,957.43	-606.24	355.44	702.68	0.30	-0.08	3.33	108.14
	NORMAL	5,105.0	4.31	145.25	5,051.13	-612.20	359.97	710.10	0.69	-0.56	4.96	147.26
	NORMAL	5,200.0	3.61	152.81	5,145.90	-617.80	363.37	716.64	0.92	-0.74	7.96	147.01
	NORMAL	5,294.0	2.02	148.50	5,239.79	-621.84	365.59	721.26	1.71	-1.69	-4.59	185.43
	NORMAL	5,385.0	1.58	159.14	5,330.74	-624.38	366.88	724.10	0.61	-0.48	11.69	148.02
	NORMAL	5,480.0	1.23	165.38	5,425.71	-626.59	367.60	726.38	0.40	-0.37	6.57	159.49
	NORMAL	5,573.0	1.41	170.47	5,518.69	-628.69	368.04	728.42	0.23	0.19	5.47	35.64
	NORMAL	5,667.0	1.06	174.08	5,612.67	-630.69	368.32	730.30	0.38	-0.37	3.84	169.27
	NORMAL	5,761.0	0.26	95.24	5,706.66	-631.58	368.62	731.22	1.11	-0.85	-83.87	194.18
	NORMAL	5,855.0	0.62	96.29	5,800.66	-631.65	369.34	731.64	0.38	0.38	1.12	1.81
	NORMAL	5,948.0	0.79	162.29	5,893.65	-632.32	370.04	732.56	0.84	0.18	70.97	112.48
	NORMAL	6,043.0	0.70	78.63	5,988.65	-632.83	370.80	733.38	1.05	-0.09	-88.06	224.31
	NORMAL	6,137.0	0.26	7.53	6,082.64	-632.50	371.40	733.39	0.71	-0.47	-75.64	201.78
	NORMAL	6,231.0	0.44	310.04	6,176.64	-632.06	371.15	732.89	0.40	0.19	-61.16	266.37
	NORMAL	6,325.0	0.44	253.88	6,270.64	-631.93	370.52	732.46	0.44	0.00	-59.74	241.92
	NORMAL	6,419.0	0.18	46.81	6,364.64	-631.93	370.29	732.34	0.64	-0.28	162.69	172.23
12/11/2011	NORMAL	6,513.0	1.76	41.10	6,458.62	-630.74	371.34	731.83	1.68	1.68	-6.07	353.64
	NORMAL	6,607.0	1.67	52.26	6,552.58	-628.81	373.37	731.16	0.37	-0.10	11.87	110.61
	NORMAL	6,701.0	1.32	79.60	6,646.55	-627.78	375.52	731.32	0.83	-0.37	29.09	129.37
12/12/2011	NORMAL	6,793.0	0.88	150.00	6,738.54	-628.20	376.92	732.37	1.43	-0.48	76.52	141.03
	NORMAL	6,886.0	0.97	210.48	6,831.53	-629.49	376.88	733.48	1.01	0.10	65.03	115.47
	NORMAL	6,981.0	0.79	202.29	6,926.52	-630.79	376.22	734.29	0.23	-0.19	-8.62	210.90
	NORMAL	7,074.0	0.88	199.65	7,019.51	-632.06	375.74	735.15	0.11	0.10	-2.84	335.53
	NORMAL	7,169.0	1.14	197.11	7,114.49	-633.65	375.21	736.27	0.28	0.27	-2.67	348.96

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 (°)
12/12/2011	NORMAL	7,263.0	1.41	194.12	7,208.47	-635.66	374.66	737.75	0.30	0.29	-3.18	344.66
	NORMAL	7,355.0	0.44	144.02	7,300.46	-637.05	374.59	738.92	1.28	-1.05	-54.46	196.66
	NORMAL	7,449.0	1.76	73.00	7,394.44	-636.92	376.18	739.59	1.78	1.40	-75.55	274.55
12/13/2011	NORMAL	7,543.0	2.02	82.50	7,488.39	-636.28	379.20	740.53	0.43	0.28	10.11	55.13
	NORMAL	7,636.0	1.93	97.96	7,581.33	-636.28	382.38	742.10	0.58	-0.10	16.62	107.26
	NORMAL	7,731.0	1.67	108.86	7,676.29	-636.95	385.27	744.11	0.45	-0.27	11.47	132.58
	NORMAL	7,824.0	1.85	113.70	7,769.24	-637.99	387.93	746.32	0.25	0.19	5.20	41.99
	NORMAL	7,891.0	1.93	115.54	7,836.21	-638.91	389.94	748.11	0.15	0.12	2.75	38.10
	NORMAL	7,945.0	1.93	115.54	7,890.18	-639.70	391.58	749.61	0.00	0.00	0.00	0.00