

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 31-36	Wellbore No.	
Well Name	RWF 31-36	Common Name	RWF 31-36
Project	RU 36-06S-094W	Site	RWF 32-36 Pad
Vertical Section	357.56 (")	North Reference	True
Azimuth		Origin E/W	
Origin N/S		UWI	RWF 31-36
Spud Date	1/16/2012		
Active Datum	KB @6,451.4ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SCIENTIFIC
Date Started	1/16/2012	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

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 (")
1/16/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/16/2012	NORMAL	83.0	0.26	43.86	83.00	0.14	0.13	0.13	0.31	0.31	0.00	43.86
	NORMAL	178.0	2.64	12.30	177.96	2.43	0.75	2.40	2.55	2.51	-33.22	325.22
	NORMAL	269.0	5.89	350.51	268.70	9.08	0.42	9.06	3.93	3.57	-23.95	322.35
	NORMAL	360.0	7.74	350.16	359.06	19.73	-1.39	19.77	2.03	2.03	-0.38	358.54
1/17/2012	NORMAL	431.0	8.26	356.14	429.37	29.53	-2.56	29.61	1.38	0.73	8.42	60.99
	NORMAL	522.0	10.33	5.66	519.17	44.17	-2.19	44.22	2.83	2.27	10.46	41.37
	NORMAL	613.0	11.97	2.02	608.45	61.72	-1.05	61.71	1.96	1.80	-4.00	334.98
	NORMAL	705.0	11.26	357.51	698.57	80.23	-1.11	80.21	1.25	-0.77	-4.90	229.78
	NORMAL	796.0	10.16	354.55	787.98	97.10	-2.26	97.11	1.35	-1.21	-3.25	205.12
	NORMAL	888.0	10.64	354.28	878.47	113.63	-3.87	113.69	0.52	0.52	-0.29	354.07
	NORMAL	980.0	9.68	356.00	969.03	129.79	-5.26	129.90	1.09	-1.04	1.87	163.31
	NORMAL	1,075.0	10.32	355.05	1,062.59	146.24	-6.55	146.39	0.70	0.67	-1.00	345.08
1/19/2012	NORMAL	1,166.0	11.41	354.45	1,151.95	163.32	-8.12	163.52	1.20	1.20	-0.66	353.78
	NORMAL	1,262.0	11.13	356.62	1,246.10	182.02	-9.59	182.26	0.53	-0.29	2.26	124.50
	NORMAL	1,358.0	11.32	357.62	1,340.27	200.68	-10.53	200.95	0.28	0.20	1.04	46.19
	NORMAL	1,453.0	11.53	357.01	1,433.38	219.48	-11.41	219.77	0.26	0.22	-0.64	329.79
	NORMAL	1,549.0	11.36	356.98	1,527.47	238.50	-12.41	238.82	0.18	-0.18	-0.03	181.99
	NORMAL	1,644.0	10.83	355.74	1,620.70	256.75	-13.56	257.09	0.61	-0.56	-1.31	203.63
	NORMAL	1,740.0	10.74	355.96	1,715.00	274.66	-14.86	275.05	0.10	-0.09	0.23	155.53
	NORMAL	1,836.0	10.21	355.41	1,809.40	292.07	-16.17	292.49	0.56	-0.55	-0.57	190.41

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 (°)
1/19/2012	NORMAL	1,929.0	10.55	356.75	1,900.88	308.78	-17.32	309.24	0.45	0.37	1.44	36.04
	NORMAL	2,025.0	10.29	357.08	1,995.30	328.12	-18.25	328.60	0.28	-0.27	0.32	167.98
	NORMAL	2,120.0	10.82	359.58	2,088.69	343.51	-18.76	344.00	0.74	0.56	2.65	42.30
	NORMAL	2,216.0	10.29	0.18	2,183.07	361.10	-18.79	361.57	0.56	-0.55	0.63	168.58
	NORMAL	2,312.0	10.41	2.10	2,277.50	378.34	-18.45	378.78	0.38	0.12	2.00	71.76
	NORMAL	2,407.0	11.87	359.57	2,370.71	396.69	-18.21	397.10	1.62	1.54	-2.66	340.24
	NORMAL	2,502.0	11.84	358.50	2,463.69	416.20	-18.54	416.61	0.23	-0.03	-1.13	261.71
	NORMAL	2,596.0	11.96	359.21	2,555.67	435.58	-18.92	435.99	0.20	0.13	0.76	51.01
	NORMAL	2,691.0	10.82	357.19	2,648.79	454.33	-19.50	454.75	1.27	-1.20	-2.13	198.30
	NORMAL	2,786.0	10.20	358.05	2,742.20	471.63	-20.51	472.07	0.69	-0.65	-1.20	197.98
	NORMAL	2,882.0	10.90	355.79	2,836.58	489.16	-21.76	489.64	0.73	0.73	-0.27	355.98
	NORMAL	2,977.0	10.14	356.78	2,929.98	506.47	-22.89	506.98	0.82	-0.80	1.04	167.11
	NORMAL	3,071.0	10.73	356.93	3,022.42	523.47	-23.83	524.00	0.63	0.63	0.16	2.71
	NORMAL	3,163.0	10.81	356.81	3,112.80	540.63	-24.77	541.20	0.09	0.09	-0.13	344.28
	NORMAL	3,259.0	11.31	355.77	3,207.02	559.01	-25.96	559.61	0.56	0.52	-1.08	337.74
	NORMAL	3,354.0	10.02	356.84	3,300.38	576.55	-27.10	577.18	1.37	-1.36	1.13	171.80
	NORMAL	3,449.0	9.82	355.83	3,393.96	592.88	-28.15	593.54	0.28	-0.21	-1.06	220.53
	NORMAL	3,545.0	10.65	358.91	3,488.43	609.91	-29.22	610.60	0.89	0.86	1.13	13.55
	NORMAL	3,640.0	10.35	356.78	3,581.84	627.19	-30.17	627.91	0.32	-0.32	-0.14	184.45
	NORMAL	3,736.0	10.45	355.47	3,676.26	644.48	-31.35	645.23	0.27	0.10	-1.36	292.28
	NORMAL	3,831.0	11.63	0.32	3,769.50	662.65	-31.97	663.41	1.58	1.24	5.11	40.60
	NORMAL	3,925.0	10.82	359.15	3,861.70	680.94	-32.05	681.69	0.90	-0.88	-1.24	195.13
	NORMAL	4,021.0	10.63	358.78	3,956.03	698.81	-32.37	699.55	0.21	-0.20	-0.39	199.74
	NORMAL	4,116.0	9.95	359.18	4,049.50	715.77	-32.68	716.51	0.72	-0.72	0.42	174.20
1/20/2012	NORMAL	4,212.0	9.79	357.26	4,144.08	732.22	-33.19	732.97	0.38	-0.17	-2.00	243.13
	NORMAL	4,307.0	10.35	0.60	4,237.61	748.82	-33.48	749.57	0.85	0.59	3.52	47.85
	NORMAL	4,400.0	10.12	358.62	4,329.13	765.34	-33.59	766.08	0.45	-0.25	-2.13	235.85
	NORMAL	4,495.0	10.36	359.01	4,422.62	782.23	-33.94	782.96	0.26	0.25	0.41	16.30
	NORMAL	4,590.0	9.77	357.43	4,516.16	798.82	-34.45	799.56	0.69	-0.62	-1.66	204.30
	NORMAL	4,686.0	10.37	357.10	4,610.68	815.59	-35.25	816.35	0.63	0.63	-0.34	354.34
	NORMAL	4,781.0	10.42	357.77	4,704.12	832.71	-36.02	833.49	0.14	0.05	0.71	67.86
	NORMAL	4,877.0	11.02	356.83	4,798.44	850.55	-36.87	851.34	0.65	0.63	-0.98	343.29
	NORMAL	4,972.0	11.50	357.05	4,891.62	869.07	-37.85	869.89	0.51	0.51	0.23	5.22
	NORMAL	5,068.0	11.87	358.93	4,985.63	888.48	-38.88	889.33	0.39	0.39	-0.12	356.18
	NORMAL	5,163.0	11.04	0.21	5,078.73	907.34	-39.37	908.19	1.11	-0.67	3.45	143.47
	NORMAL	5,259.0	11.55	0.23	5,172.87	926.14	-39.29	926.97	0.53	0.53	0.02	0.45
1/21/2012	NORMAL	5,354.0	10.20	359.30	5,266.17	944.06	-39.36	944.88	1.43	-1.42	-0.98	186.95
	NORMAL	5,450.0	10.53	358.91	5,360.60	961.33	-39.63	962.15	0.35	0.34	-0.41	347.80
	NORMAL	5,545.0	9.57	4.92	5,454.14	977.88	-39.12	978.66	1.50	-1.01	6.33	135.40
	NORMAL	5,641.0	8.18	2.55	5,548.99	992.65	-38.13	993.38	1.50	-1.45	-2.47	193.57
	NORMAL	5,737.0	6.24	0.88	5,644.23	1,004.69	-37.74	1,005.39	2.03	-2.02	-1.74	185.34
	NORMAL	5,832.0	5.54	0.00	5,738.73	1,014.44	-37.66	1,015.13	0.74	-0.74	-0.93	186.91
	NORMAL	5,928.0	4.74	358.60	5,834.34	1,023.04	-37.76	1,023.72	0.84	-0.83	-1.46	188.21
	NORMAL	6,023.0	4.48	354.40	5,929.03	1,030.66	-38.22	1,031.35	0.45	-0.27	-4.42	230.32
	NORMAL	6,119.0	3.79	358.08	6,024.78	1,037.56	-38.69	1,038.27	0.77	-0.72	3.83	160.79
	NORMAL	6,214.0	3.51	355.98	6,119.59	1,043.60	-39.00	1,044.31	0.33	-0.29	-2.21	204.48
	NORMAL	6,310.0	3.08	349.28	6,215.43	1,049.07	-39.69	1,049.80	0.60	-0.45	-8.98	218.53
1/22/2012	NORMAL	6,405.0	2.90	348.84	6,310.30	1,053.93	-40.63	1,054.71	0.19	-0.19	-0.46	187.05
	NORMAL	6,501.0	2.76	343.18	6,406.18	1,058.83	-41.77	1,059.34	0.33	-0.15	-5.90	240.58
	NORMAL	6,596.0	2.64	344.12	6,501.08	1,062.82	-43.03	1,063.69	0.13	-0.13	0.99	160.21
	NORMAL	6,692.0	2.20	357.72	6,596.99	1,066.79	-43.70	1,067.68	0.75	-0.46	14.17	134.12
	NORMAL	6,788.0	1.54	347.56	6,690.94	1,069.82	-44.05	1,070.73	0.78	-0.70	-10.81	201.66
	NORMAL	6,881.0	1.32	342.34	6,785.91	1,072.11	-44.66	1,073.04	0.27	-0.23	-5.49	208.04
	NORMAL	6,977.0	1.06	1.15	6,881.89	1,074.05	-44.97	1,075.00	0.49	-0.27	19.59	132.81
	NORMAL	7,072.0	1.22	42.16	6,976.88	1,075.68	-44.28	1,076.59	0.86	0.17	43.17	99.87
	NORMAL	7,168.0	0.79	70.05	7,072.86	1,076.67	-42.97	1,077.52	0.67	-0.45	29.05	144.69
	NORMAL	7,262.0	0.65	114.90	7,166.86	1,076.66	-41.88	1,077.47	0.60	-0.15	47.71	125.68

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 (°)
1/22/2012	NORMAL	7,358.0	0.41	162.85	7,262.85	1,076.11	-41.28	1,076.89	0.50	-0.25	49.74	140.97
	NORMAL	7,452.0	0.35	115.41	7,356.85	1,075.66	-40.92	1,076.43	0.33	-0.06	-50.26	236.15
	NORMAL	7,547.0	0.26	263.36	7,451.85	1,075.51	-40.87	1,076.28	0.62	-0.09	155.74	166.40
	NORMAL	7,643.0	0.97	220.87	7,547.84	1,074.87	-41.62	1,075.67	0.83	0.74	-44.26	304.80
1/23/2012	NORMAL	7,739.0	0.45	301.83	7,643.84	1,074.46	-42.47	1,075.29	1.04	-0.54	84.33	153.70
	NORMAL	7,832.0	1.08	270.09	7,736.83	1,074.65	-43.64	1,075.53	0.77	0.66	-34.13	309.00
	NORMAL	7,928.0	0.62	290.04	7,832.82	1,074.83	-45.02	1,075.77	0.54	-0.46	20.78	156.09
	NORMAL	8,022.0	0.69	290.04	7,926.81	1,075.20	-46.03	1,076.18	0.07	0.07	0.00	0.00
	NORMAL	8,118.0	0.62	49.40	8,022.81	1,075.73	-46.18	1,076.73	1.18	-0.07	124.33	151.47
	NORMAL	8,213.0	0.26	6.86	8,117.81	1,076.28	-45.76	1,077.26	0.49	-0.38	-44.78	202.31
	NORMAL	8,308.0	0.38	45.85	8,212.81	1,076.72	-45.51	1,077.68	0.25	0.13	41.04	81.59
	NORMAL	8,404.0	0.35	22.68	8,308.80	1,077.21	-45.17	1,078.16	0.16	-0.03	-24.14	247.08
	NORMAL	8,500.0	0.35	257.00	8,404.80	1,077.41	-45.34	1,078.37	0.65	0.00	-130.92	207.16
	NORMAL	8,595.0	1.14	261.92	8,499.79	1,077.22	-46.56	1,078.22	0.83	0.83	5.18	7.09
	NORMAL	8,691.0	1.86	267.43	8,595.76	1,077.01	-49.06	1,078.12	0.76	0.75	5.74	14.09
1/24/2012	NORMAL	8,786.0	2.38	255.08	8,690.70	1,076.43	-52.51	1,077.69	0.73	0.55	-13.00	312.42
	NORMAL	8,858.0	2.55	256.12	8,762.63	1,075.67	-55.51	1,077.05	0.24	0.24	1.44	15.26
1/25/2012	NORMAL	8,914.0	2.55	256.12	8,818.57	1,075.07	-57.92	1,076.58	0.00	0.00	0.00	0.00