

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RWF 411-25	Wellbore No.	00
Wellbore Legal Name	RWF 411-25	Common Wellbore Name	RWF 411-25
Project	RU 25-06S-094W	Site	RWF 22-25 Pad
Vertical Section Azimuth	338.00 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	1/24/2014	UWI	RWF 411-25
Active datum	KB @6,058.4ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	1/24/2014	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 (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
1/24/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/24/2014	NORMAL	74.0	0.35	304.28	74.00	0.13	-0.19	0.19	0.47	0.47	0.00	304.28
	NORMAL	165.0	1.23	345.15	164.99	1.23	-0.67	1.39	1.09	0.97	44.91	54.21
	NORMAL	255.0	3.08	336.01	254.92	4.37	-1.90	4.76	2.08	2.08	-10.16	344.89
	NORMAL	346.0	5.98	340.93	345.63	11.09	-4.44	11.94	3.21	3.19	5.41	10.09
	NORMAL	437.0	10.03	340.05	435.72	23.02	-8.70	24.60	4.45	4.45	-0.97	357.83
	NORMAL	527.0	13.11	340.05	523.88	39.99	-14.85	42.64	3.42	3.42	0.00	0.00
1/25/2014	NORMAL	617.0	15.40	340.14	611.11	60.82	-22.40	64.78	2.54	2.54	0.10	0.60
	NORMAL	688.0	16.67	336.56	679.35	79.03	-29.65	84.39	2.27	1.79	-5.04	320.36
	NORMAL	778.0	18.45	335.87	765.15	103.88	-40.61	111.52	1.99	1.98	-0.77	353.00
	NORMAL	868.0	20.94	337.87	849.88	131.78	-52.49	141.84	2.87	2.77	2.22	16.09
	NORMAL	959.0	22.69	336.66	934.36	162.96	-65.57	175.65	1.99	1.92	-1.33	345.03
	NORMAL	1,053.0	23.43	335.67	1,020.85	196.63	-80.45	212.45	0.89	0.79	-1.05	331.89
	NORMAL	1,105.0	24.24	336.51	1,068.41	215.84	-88.97	233.45	1.69	1.56	1.62	23.12
1/26/2014	NORMAL	1,176.0	23.57	337.52	1,133.32	242.33	-100.21	262.22	1.11	-0.94	1.42	149.04
	NORMAL	1,239.0	23.45	336.94	1,191.09	265.50	-109.93	287.35	0.41	-0.19	-0.92	242.32
	NORMAL	1,333.0	21.77	335.78	1,277.86	298.61	-124.41	323.47	1.85	-1.79	-1.23	194.33
	NORMAL	1,428.0	20.11	337.74	1,366.59	329.79	-137.83	357.41	1.90	-1.75	2.06	158.03
	NORMAL	1,523.0	19.79	336.90	1,455.89	359.70	-150.32	389.82	0.45	-0.34	-0.88	221.45
	NORMAL	1,618.0	20.01	342.30	1,545.22	389.98	-161.57	422.11	1.95	0.23	5.68	85.72
	NORMAL	1,713.0	19.34	340.31	1,634.68	420.27	-171.82	454.03	1.00	-0.71	-2.09	224.07

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
1/26/2014	NORMAL	1,807.0	21.01	345.07	1,722.91	451.22	-181.40	486.31	2.49	1.78	5.06	46.76
	NORMAL	1,901.0	20.76	344.63	1,810.74	483.56	-190.16	519.59	0.31	-0.27	-0.47	211.90
	NORMAL	1,994.0	21.92	344.11	1,897.36	516.15	-199.28	553.22	1.26	1.25	-0.56	350.49
	NORMAL	2,088.0	21.64	344.60	1,984.65	549.74	-208.69	587.88	0.36	-0.30	0.52	147.23
	NORMAL	2,181.0	21.50	341.46	2,071.14	582.43	-218.66	621.93	1.25	-0.15	-3.38	261.63
	NORMAL	2,275.0	21.59	340.30	2,158.57	615.04	-229.97	656.40	0.46	0.10	-1.23	281.39
	NORMAL	2,368.0	20.93	339.39	2,245.24	646.70	-241.58	690.11	0.79	-0.71	-0.98	206.14
	NORMAL	2,462.0	20.93	338.91	2,333.04	678.08	-253.53	723.68	0.18	0.00	-0.51	269.78
	NORMAL	2,555.0	20.41	337.61	2,420.05	708.57	-265.69	756.50	0.75	-0.56	-1.40	220.82
	NORMAL	2,649.0	20.54	337.05	2,508.11	738.91	-278.36	789.38	0.25	0.14	-0.60	303.31
	NORMAL	2,742.0	20.01	336.51	2,595.35	768.53	-291.07	821.60	0.60	-0.57	-0.58	199.19
	NORMAL	2,836.0	20.35	336.14	2,683.58	798.23	-304.09	854.02	0.39	0.36	-0.39	339.25
	NORMAL	2,929.0	20.30	336.59	2,770.79	827.82	-317.04	886.30	0.18	-0.05	0.48	107.95
	NORMAL	3,023.0	19.67	334.58	2,859.13	857.07	-330.31	918.40	0.99	-0.67	-2.14	226.54
	NORMAL	3,117.0	20.02	338.85	2,947.55	886.37	-342.91	950.28	1.59	0.37	4.54	78.44
	NORMAL	3,212.0	19.72	339.03	3,036.90	916.50	-354.51	982.57	0.32	-0.32	0.19	168.56
	NORMAL	3,307.0	20.33	340.29	3,126.15	947.00	-365.81	1,015.08	0.79	0.64	1.33	35.87
	NORMAL	3,399.0	21.38	340.33	3,212.13	977.84	-376.85	1,047.81	1.14	1.14	0.04	0.80
	NORMAL	3,491.0	21.92	339.27	3,297.64	1,009.69	-388.57	1,081.73	0.72	0.59	-1.15	323.59
	NORMAL	3,585.0	21.38	339.18	3,385.00	1,042.12	-400.87	1,116.40	0.58	-0.57	-0.10	183.48
	NORMAL	3,678.0	22.83	339.71	3,471.17	1,074.89	-413.15	1,151.39	1.57	1.56	0.57	8.08
	NORMAL	3,772.0	23.11	338.09	3,557.71	1,109.11	-426.36	1,188.06	0.74	0.30	-1.72	293.14
1/27/2014	NORMAL	3,866.0	23.12	337.16	3,644.17	1,143.23	-440.41	1,224.96	0.39	0.01	-0.99	271.14
	NORMAL	3,961.0	22.84	335.37	3,731.63	1,177.18	-455.33	1,262.03	0.79	-0.29	-1.88	247.34
	NORMAL	4,055.0	22.63	334.58	3,818.33	1,210.10	-470.70	1,298.31	0.39	-0.22	-0.84	235.12
	NORMAL	4,148.0	21.46	337.17	3,904.53	1,241.94	-484.98	1,333.18	1.64	-1.26	2.78	141.47
	NORMAL	4,242.0	20.23	336.03	3,992.37	1,272.64	-498.25	1,366.62	1.38	-1.31	-1.21	197.72
	NORMAL	4,336.0	19.68	339.77	4,080.73	1,302.34	-510.33	1,398.68	1.48	-0.59	3.98	115.06
	NORMAL	4,428.0	19.73	338.79	4,167.35	1,331.35	-521.30	1,429.69	0.36	0.05	-1.07	278.14
	NORMAL	4,523.0	18.53	337.95	4,257.10	1,360.29	-532.77	1,460.82	1.30	-1.26	-0.88	192.52
	NORMAL	4,618.0	19.15	338.99	4,347.01	1,388.83	-544.03	1,491.50	0.74	0.65	1.09	28.94
	NORMAL	4,712.0	17.54	336.67	4,436.23	1,416.23	-555.17	1,521.08	1.88	-1.71	-2.47	203.30
	NORMAL	4,804.0	16.27	336.38	4,524.25	1,440.77	-565.82	1,547.82	1.38	-1.38	-0.32	183.66
	NORMAL	4,897.0	15.04	335.50	4,613.80	1,463.69	-576.04	1,572.90	1.35	-1.32	-0.95	190.50
	NORMAL	4,992.0	14.39	338.94	4,705.69	1,485.92	-585.40	1,597.02	1.15	-0.68	3.62	128.30
	NORMAL	5,088.0	14.07	338.22	4,796.80	1,507.43	-593.83	1,620.12	0.39	-0.34	-0.77	208.60
	NORMAL	5,180.0	12.75	339.19	4,888.24	1,527.74	-601.76	1,641.92	1.42	-1.40	1.03	170.80
	NORMAL	5,274.0	11.70	338.11	4,980.10	1,546.28	-609.00	1,661.82	1.14	-1.12	-1.15	191.76
	NORMAL	5,367.0	10.50	339.46	5,071.36	1,562.97	-615.49	1,679.72	1.32	-1.29	1.45	168.44
	NORMAL	5,461.0	9.37	341.92	5,163.95	1,578.26	-620.87	1,695.92	1.28	-1.20	2.62	160.62
	NORMAL	5,555.0	8.06	347.70	5,256.87	1,591.98	-624.65	1,710.05	1.67	-1.39	6.15	149.07
1/28/2014	NORMAL	5,649.0	7.36	350.57	5,350.02	1,604.35	-627.04	1,722.42	0.85	-0.74	3.05	152.60
	NORMAL	5,742.0	5.92	344.90	5,442.39	1,614.86	-629.26	1,733.00	1.70	-1.55	-6.10	201.68
	NORMAL	5,836.0	4.77	345.25	5,535.98	1,623.32	-631.52	1,741.69	1.22	-1.22	0.37	178.55
	NORMAL	5,931.0	4.18	342.33	5,630.69	1,630.44	-633.58	1,749.06	0.67	-0.62	-3.07	199.66
	NORMAL	6,025.0	4.01	339.20	5,724.45	1,636.78	-635.78	1,755.76	0.30	-0.18	-3.33	231.19
	NORMAL	6,120.0	4.13	336.90	5,819.21	1,643.03	-638.30	1,762.50	0.21	0.13	-2.42	305.17
	NORMAL	6,215.0	2.73	346.04	5,914.04	1,648.37	-640.19	1,768.16	1.58	-1.47	9.62	163.18
	NORMAL	6,309.0	2.58	344.08	6,007.94	1,652.58	-641.31	1,772.48	0.19	-0.16	-2.09	210.21
	NORMAL	6,402.0	2.66	354.09	6,100.84	1,656.74	-642.11	1,776.64	0.50	0.09	10.76	85.11
	NORMAL	6,495.0	1.02	355.73	6,193.79	1,659.71	-642.39	1,779.50	1.76	-1.76	1.76	178.98
1/29/2014	NORMAL	6,589.0	0.74	305.00	6,287.78	1,660.89	-642.95	1,780.81	0.85	-0.30	-53.97	226.09
	NORMAL	6,682.0	0.88	338.92	6,380.77	1,661.90	-643.70	1,782.03	0.53	0.15	36.47	91.14
	NORMAL	6,777.0	1.28	314.93	6,475.76	1,663.33	-644.72	1,783.73	0.63	0.42	-25.25	299.08
	NORMAL	6,871.0	0.97	258.59	6,569.74	1,663.92	-646.24	1,784.84	1.17	-0.33	-59.94	227.41
	NORMAL	6,965.0	1.36	268.51	6,663.72	1,663.73	-648.13	1,785.38	0.47	0.41	10.55	32.36

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
1/30/2014	NORMAL	7,060.0	0.53	224.67	8,758.71	1,663.39	-649.57	1,785.60	1.10	-0.87	-46.15	200.58
	NORMAL	7,155.0	0.30	277.37	6,853.71	1,663.11	-650.13	1,785.55	0.44	-0.24	55.47	145.57
	NORMAL	7,248.0	0.44	264.57	6,946.70	1,663.11	-650.72	1,785.77	0.17	0.15	-13.76	322.94
	NORMAL	7,342.0	0.67	254.36	7,040.70	1,662.92	-651.61	1,785.93	0.27	0.24	-10.86	331.57
	NORMAL	7,436.0	0.88	305.64	7,134.69	1,663.20	-652.73	1,786.60	0.74	0.22	54.55	99.87
	NORMAL	7,529.0	0.42	347.54	7,227.69	1,663.95	-653.38	1,787.54	0.68	-0.49	45.05	153.69
	NORMAL	7,622.0	0.18	71.70	7,320.68	1,664.32	-653.32	1,787.87	0.47	-0.26	90.49	155.97
	NORMAL	7,716.0	0.57	154.80	7,414.68	1,663.95	-652.98	1,787.39	0.61	0.41	88.40	101.15
	NORMAL	7,810.0	0.47	173.76	7,508.68	1,663.14	-652.74	1,786.56	0.21	-0.11	20.17	129.41
1/31/2014	NORMAL	7,904.0	1.06	234.67	7,602.67	1,662.26	-653.40	1,785.99	0.99	0.63	64.80	87.19
	NORMAL	7,997.0	0.66	255.55	7,695.66	1,661.82	-654.62	1,785.86	0.54	-0.43	22.45	152.05
	NORMAL	8,091.0	1.99	238.11	7,789.63	1,660.63	-656.53	1,785.65	1.46	1.41	-18.55	334.29
	NORMAL	8,185.0	2.64	240.66	7,883.56	1,658.70	-659.81	1,785.09	0.70	0.69	2.71	10.28
	NORMAL	8,279.0	4.12	248.51	7,977.39	1,656.41	-664.84	1,784.84	1.65	1.57	8.35	21.31
	NORMAL	8,372.0	3.69	252.35	8,070.18	1,654.27	-670.80	1,785.10	0.54	-0.46	4.13	150.60
2/1/2014	NORMAL	8,466.0	2.66	247.79	8,164.03	1,652.53	-675.70	1,785.32	1.13	-1.10	-4.85	191.51
	NORMAL	8,560.0	2.02	246.38	8,257.95	1,651.04	-679.24	1,785.27	0.68	-0.68	-1.50	184.44
	NORMAL	8,655.0	2.37	227.04	8,352.88	1,649.04	-682.21	1,784.52	0.86	0.37	-20.36	285.42
	NORMAL	8,749.0	2.50	233.16	8,446.80	1,646.48	-685.27	1,783.30	0.31	0.14	6.51	66.52
	NORMAL	8,843.0	2.93	218.83	8,540.69	1,643.38	-688.42	1,781.60	0.85	0.46	-15.24	295.06
	NORMAL	8,908.0	2.93	218.83	8,605.61	1,640.79	-690.50	1,779.98	0.00	0.00	0.00	0.00
	NORMAL	8,909.0	2.93	218.83	8,606.61	1,640.75	-690.53	1,779.96	0.00	0.00	0.00	0.00