

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RWF 311-25	Wellbore No.	00
Wellbore Legal Name	RWF 311-25	Common Wellbore Name	RWF 311-25
Project	RU 25-06S-094W	Site	RWF 22-25 Pad
Vertical Section Azimuth	335.75 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	1/13/2014	UWI	RWF 311-25
Active datum	KB @6,058.4ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	1/13/2014	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)	Buld Rate (°/100usft)	Turn (°/100usft)	Tface (°)
1/13/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/13/2014	NORMAL	74.0	0.44	308.67	74.00	0.18	-0.22	0.25	0.59	0.59	0.00	308.67
	NORMAL	165.0	2.90	340.22	164.95	2.56	-1.27	2.86	2.79	2.70	34.67	36.76
	NORMAL	256.0	4.66	332.05	255.75	7.99	-3.79	8.84	2.02	1.93	-8.98	338.88
	NORMAL	346.0	4.66	335.39	345.46	14.55	-7.02	16.15	0.30	0.00	3.71	91.66
1/14/2014	NORMAL	437.0	5.54	336.36	436.10	21.93	-10.32	24.24	0.97	0.97	1.07	6.08
	NORMAL	527.0	8.36	337.32	525.42	31.95	-14.59	35.12	3.14	3.13	1.07	2.84
	NORMAL	617.0	10.29	336.80	614.23	45.38	-20.28	49.70	2.15	2.14	-0.58	357.24
	NORMAL	687.0	11.87	337.08	682.92	57.76	-25.55	63.15	2.26	2.26	0.40	2.09
	NORMAL	778.0	13.58	333.07	771.69	75.90	-34.03	83.18	2.11	1.88	-4.41	330.72
	NORMAL	868.0	15.61	335.10	858.78	96.31	-43.91	105.85	2.33	2.26	2.26	15.13
	NORMAL	958.0	16.64	338.30	945.24	119.27	-53.78	130.83	1.51	1.14	3.56	42.33
	NORMAL	1,052.0	18.06	335.63	1,034.96	145.04	-64.77	158.85	1.73	1.51	-2.84	329.44
1/15/2014	NORMAL	1,145.0	17.23	332.77	1,123.59	170.42	-77.02	187.02	1.29	-0.89	-3.08	224.89
	NORMAL	1,239.0	16.87	332.23	1,213.46	194.87	-89.74	214.54	0.42	-0.38	-0.57	203.48
	NORMAL	1,333.0	16.90	332.08	1,303.40	219.01	-102.50	241.78	0.06	0.03	-0.16	304.48
	NORMAL	1,428.0	17.64	332.97	1,394.12	244.04	-115.50	269.94	0.83	0.78	0.94	20.07
	NORMAL	1,523.0	17.33	334.50	1,484.73	269.63	-128.14	298.47	0.58	-0.33	1.61	124.72
	NORMAL	1,618.0	16.90	334.21	1,575.52	294.83	-140.23	326.41	0.46	-0.45	-0.31	191.09
	NORMAL	1,713.0	17.40	338.36	1,666.30	320.47	-151.48	354.41	1.39	0.53	4.37	69.77
	NORMAL	1,807.0	17.23	337.96	1,756.04	346.44	-161.89	382.36	0.22	-0.18	-0.43	214.81

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 (°)
1/15/2014	NORMAL	1,901.0	16.71	337.96	1,845.95	371.87	-172.18	409.78	0.55	-0.55	0.00	180.00
	NORMAL	1,994.0	17.40	337.64	1,934.86	397.12	-182.49	437.03	0.75	0.74	-0.34	352.10
	NORMAL	2,088.0	17.06	336.11	2,024.64	422.73	-193.42	464.87	0.60	-0.36	-1.63	232.39
	NORMAL	2,181.0	16.64	336.19	2,113.65	447.38	-204.32	491.83	0.45	-0.45	0.09	176.88
	NORMAL	2,275.0	16.86	335.51	2,203.66	472.10	-215.41	518.92	0.31	0.23	-0.72	317.98
	NORMAL	2,368.0	18.13	337.39	2,292.36	497.73	-226.56	546.87	1.49	1.37	2.02	24.89
	NORMAL	2,462.0	17.97	337.78	2,381.73	524.66	-237.67	575.98	0.21	-0.17	0.41	143.12
	NORMAL	2,555.0	17.23	337.17	2,470.38	550.64	-248.44	604.09	0.82	-0.80	-0.66	193.71
	NORMAL	2,649.0	17.96	338.09	2,559.98	576.91	-259.25	632.48	0.83	0.78	0.98	21.29
1/16/2014	NORMAL	2,743.0	17.59	336.70	2,649.49	603.40	-270.27	661.17	0.60	-0.39	-1.48	228.25
	NORMAL	2,836.0	17.14	336.50	2,738.25	628.88	-281.30	688.92	0.49	-0.48	-0.22	187.46
	NORMAL	2,929.0	17.01	336.07	2,827.15	653.88	-292.28	716.23	0.19	-0.14	-0.46	223.96
	NORMAL	3,023.0	16.88	335.58	2,917.07	678.87	-303.50	743.62	0.21	-0.14	-0.52	227.45
	NORMAL	3,117.0	17.15	335.43	3,006.96	703.90	-314.90	771.13	0.29	0.29	-0.16	350.69
	NORMAL	3,212.0	17.12	335.48	3,097.74	729.36	-326.53	799.12	0.04	-0.03	0.05	153.87
	NORMAL	3,307.0	17.02	335.91	3,188.56	754.78	-338.01	827.00	0.17	-0.11	0.45	128.59
	NORMAL	3,399.0	18.71	336.35	3,276.12	780.59	-349.42	855.22	1.84	1.84	0.48	4.78
	NORMAL	3,491.0	18.38	336.21	3,363.34	807.38	-361.19	884.48	0.36	-0.36	-0.15	187.62
	NORMAL	3,585.0	18.70	336.64	3,452.46	834.77	-373.15	914.37	0.37	0.34	0.46	23.34
	NORMAL	3,678.0	18.89	336.70	3,540.50	862.28	-385.01	944.33	0.21	0.20	0.06	5.84
	NORMAL	3,772.0	17.82	338.47	3,629.72	889.64	-396.31	973.91	1.28	-1.14	1.88	153.32
	NORMAL	3,866.0	17.87	338.79	3,719.20	916.47	-406.81	1,002.68	0.12	0.05	0.34	63.14
	NORMAL	3,961.0	17.05	337.63	3,809.82	942.93	-417.38	1,031.16	0.94	-0.86	-1.22	202.45
	NORMAL	4,055.0	16.77	335.88	3,899.76	968.05	-428.17	1,058.49	0.62	-0.30	-1.86	240.35
	NORMAL	4,148.0	16.18	338.13	3,988.94	992.33	-438.48	1,084.85	0.93	-0.63	2.42	133.83
	NORMAL	4,242.0	16.00	338.92	4,079.26	1,016.57	-448.01	1,110.88	0.30	-0.19	0.84	129.80
	NORMAL	4,336.0	16.05	339.20	4,169.60	1,040.80	-457.29	1,136.78	0.10	0.05	0.30	57.24
	NORMAL	4,429.0	15.14	338.21	4,259.18	1,064.10	-466.36	1,161.75	1.02	-0.98	-1.06	195.83
	NORMAL	4,523.0	14.83	337.47	4,349.98	1,086.61	-475.53	1,186.04	0.39	-0.33	-0.79	211.33
	NORMAL	4,618.0	14.44	339.12	4,441.90	1,108.91	-484.41	1,210.01	0.60	-0.41	1.74	133.89
	NORMAL	4,712.0	13.38	340.35	4,533.14	1,130.10	-492.24	1,232.56	1.17	-1.13	1.31	165.01
1/17/2014	NORMAL	4,804.0	14.00	338.68	4,622.53	1,150.49	-499.87	1,254.28	0.80	0.67	-1.82	326.67
	NORMAL	4,897.0	13.27	337.31	4,712.91	1,170.82	-508.08	1,276.18	0.86	-0.78	-1.47	203.20
	NORMAL	4,992.0	12.90	338.15	4,805.44	1,190.72	-516.23	1,297.68	0.44	-0.39	0.88	153.21
	NORMAL	5,086.0	12.36	336.60	4,897.17	1,209.69	-524.13	1,318.22	0.68	-0.57	-1.65	211.36
	NORMAL	5,180.0	10.47	341.92	4,989.31	1,227.05	-530.78	1,336.78	2.30	-2.01	5.66	153.47
	NORMAL	5,274.0	9.78	339.25	5,081.84	1,242.63	-536.26	1,353.24	0.89	-0.73	-2.84	212.92
	NORMAL	5,367.0	8.82	337.62	5,173.62	1,256.61	-541.77	1,368.25	1.07	-1.03	-1.76	194.54
	NORMAL	5,462.0	8.58	338.39	5,267.52	1,269.94	-547.15	1,382.60	0.28	-0.25	0.81	154.49
	NORMAL	5,555.0	7.00	341.87	5,359.66	1,281.77	-551.47	1,395.17	1.77	-1.70	3.74	165.10
	NORMAL	5,649.0	6.07	341.65	5,453.05	1,291.93	-554.82	1,405.81	0.99	-0.99	-0.23	181.43
	NORMAL	5,742.0	5.44	340.49	5,545.58	1,300.76	-557.84	1,415.09	0.69	-0.68	-1.25	189.88
	NORMAL	5,836.0	4.76	337.68	5,639.21	1,308.56	-560.81	1,423.43	0.77	-0.72	-2.99	198.77
	NORMAL	5,931.0	4.53	352.43	5,733.90	1,315.93	-562.80	1,430.97	1.28	-0.24	15.53	108.19
	NORMAL	6,025.0	4.80	345.00	5,827.59	1,323.41	-564.30	1,438.40	0.70	0.29	-7.90	290.34
1/18/2014	NORMAL	6,120.0	3.61	349.02	5,922.33	1,330.18	-565.90	1,445.24	1.29	-1.25	4.23	168.09
	NORMAL	6,215.0	2.72	336.65	6,017.19	1,335.19	-567.37	1,450.40	1.18	-0.94	-13.02	211.43
	NORMAL	6,309.0	1.58	11.00	6,111.13	1,338.51	-568.00	1,453.69	1.78	-1.21	36.54	147.79
	NORMAL	6,403.0	1.70	13.21	6,205.09	1,341.14	-567.44	1,455.86	0.14	0.13	2.35	28.90
1/19/2014	NORMAL	6,495.0	1.29	7.76	6,297.06	1,343.49	-566.99	1,457.82	0.47	-0.45	-5.92	196.42
1/20/2014	NORMAL	6,589.0	0.90	0.13	6,391.04	1,345.28	-566.84	1,459.39	0.44	-0.41	-8.12	196.71
	NORMAL	6,682.0	0.44	326.45	6,484.03	1,346.31	-567.04	1,460.40	0.63	-0.49	-36.22	204.56
	NORMAL	6,777.0	0.20	55.21	6,579.03	1,346.71	-567.10	1,460.80	0.50	-0.25	93.43	155.35
	NORMAL	6,871.0	0.11	174.11	6,673.03	1,346.71	-566.96	1,460.74	0.29	-0.10	126.49	159.17
	NORMAL	6,965.0	0.71	181.90	6,767.03	1,346.04	-566.97	1,460.13	0.64	0.64	8.29	9.21
	NORMAL	7,061.0	0.38	285.94	6,863.02	1,345.53	-567.29	1,459.80	0.92	-0.34	108.38	155.32

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 (°)
1/20/2014	NORMAL	7,155.0	0.21	343.72	6,957.02	1,345.78	-567.64	1,460.17	0.34	-0.18	61.47	146.46
	NORMAL	7,248.0	0.12	317.53	7,050.02	1,346.02	-567.76	1,460.44	0.12	-0.10	-28.16	207.37
	NORMAL	7,342.0	0.34	173.14	7,144.02	1,345.81	-567.79	1,460.26	0.47	0.23	-153.61	206.54
	NORMAL	7,436.0	0.59	234.74	7,238.02	1,345.26	-568.15	1,459.90	0.56	0.27	65.53	96.53
1/21/2014	NORMAL	7,529.0	0.35	203.75	7,331.02	1,344.72	-568.66	1,459.62	0.37	-0.26	-33.32	211.86
	NORMAL	7,622.0	0.44	208.58	7,424.01	1,344.15	-568.94	1,459.22	0.10	0.10	5.19	22.73
	NORMAL	7,716.0	1.06	223.17	7,518.01	1,343.20	-569.71	1,458.67	0.68	0.66	15.52	24.50
	NORMAL	7,810.0	0.84	210.77	7,611.99	1,341.97	-570.66	1,457.94	0.32	-0.23	-13.19	216.97
	NORMAL	7,904.0	1.17	208.94	7,705.98	1,340.54	-571.47	1,456.97	0.35	0.35	-1.95	353.53
	NORMAL	7,997.0	1.95	222.54	7,798.94	1,338.54	-573.00	1,455.77	0.92	0.84	14.62	32.29
	NORMAL	8,091.0	2.82	219.87	7,892.86	1,335.59	-575.57	1,454.13	0.93	0.93	-2.84	351.39
	NORMAL	8,185.0	3.08	217.20	7,986.74	1,331.80	-578.58	1,451.92	0.31	0.28	-2.84	330.81
	NORMAL	8,279.0	3.52	212.27	8,080.58	1,327.35	-581.65	1,449.12	0.56	0.47	-5.24	324.70
	NORMAL	8,372.0	4.01	219.12	8,173.38	1,322.42	-585.22	1,446.09	0.71	0.53	7.37	46.00
1/22/2014	NORMAL	8,466.0	3.78	218.37	8,267.16	1,317.44	-589.22	1,443.19	0.25	-0.24	-0.80	192.12
	NORMAL	8,560.0	3.89	222.52	8,360.95	1,312.66	-593.30	1,440.51	0.32	0.12	4.41	70.46
	NORMAL	8,655.0	4.28	217.36	8,455.71	1,307.47	-597.63	1,437.55	0.56	0.41	-5.43	314.10
	NORMAL	8,715.0	4.16	224.25	8,515.55	1,304.13	-600.50	1,435.69	0.87	-0.20	11.48	106.74
	NORMAL	8,780.0	4.16	224.25	8,580.38	1,300.75	-603.80	1,433.96	0.00	0.00	0.00	0.00