

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RWF 421-35	Wellbore No.	00
Wellbore Legal Name	RWF 421-35	Common Wellbore Name	RWF 421-35
Project	RU 35-06S-094W	Site	RWF 11-35 Pad
Vertical Section Azimuth	38.77 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	9/24/2013	UWI	RWF 421-35
Active datum	KB @5,494.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	9/24/2013	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 (°)
9/24/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/24/2013	NORMAL	76.0	0.53	333.81	76.00	0.32	-0.16	0.15	0.70	0.70	0.00	333.81
	NORMAL	167.0	2.11	39.73	166.98	1.98	0.73	2.00	2.15	1.74	72.44	80.25
	NORMAL	259.0	4.84	43.42	258.80	6.10	4.48	7.56	2.98	2.97	4.01	6.53
	NORMAL	329.0	6.60	50.61	328.45	10.80	9.62	14.45	2.71	2.51	10.27	25.76
	NORMAL	419.0	8.41	38.29	417.68	19.25	17.70	26.09	2.68	2.01	-13.69	312.14
	NORMAL	510.0	11.77	38.77	507.26	31.71	27.64	42.03	3.69	3.69	0.53	1.67
	NORMAL	600.0	13.71	37.89	595.04	47.29	39.93	61.88	2.17	2.16	-0.98	353.86
	NORMAL	690.0	14.52	35.79	682.32	64.86	53.08	83.81	1.06	0.90	-2.33	326.68
9/25/2013	NORMAL	781.0	14.29	39.78	770.46	82.74	66.94	106.43	1.12	-0.25	4.38	104.97
	NORMAL	872.0	13.67	40.20	858.77	99.59	81.07	128.41	0.69	-0.68	0.46	170.91
	NORMAL	963.0	14.25	39.79	947.08	116.41	95.18	150.36	0.65	0.64	-0.45	350.12
	NORMAL	1,058.0	12.91	39.33	1,039.42	133.60	109.39	172.66	1.42	-1.41	-0.48	184.38
	NORMAL	1,098.0	12.64	38.41	1,078.43	140.49	114.94	181.51	0.85	-0.68	-2.30	216.55
9/26/2013	NORMAL	1,180.0	13.05	37.01	1,158.38	154.91	126.08	199.73	0.63	0.50	-1.71	322.11
	NORMAL	1,243.0	12.98	36.65	1,219.76	166.27	134.59	213.91	0.17	-0.11	-0.57	229.02
	NORMAL	1,338.0	13.87	39.67	1,312.17	183.59	148.23	235.96	1.19	0.94	3.18	39.71
	NORMAL	1,432.0	13.73	40.30	1,403.45	200.77	162.63	258.38	0.22	-0.15	0.67	133.28
	NORMAL	1,527.0	13.49	39.09	1,495.79	217.97	176.91	280.73	0.39	-0.25	-1.27	229.29
	NORMAL	1,621.0	13.18	38.77	1,587.25	234.84	190.54	302.41	0.34	-0.33	-0.34	193.24
	NORMAL	1,716.0	13.15	36.99	1,679.76	251.91	203.82	324.04	0.43	-0.03	-1.87	264.90

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
9/26/2013	NORMAL	1,810.0	13.00	37.12	1,771.32	268.88	216.63	345.29	0.16	-0.16	0.14	168.97
	NORMAL	1,903.0	13.10	35.31	1,861.92	285.82	229.04	366.27	0.45	0.11	-1.95	282.87
	NORMAL	1,997.0	12.77	33.43	1,953.53	303.19	240.92	387.25	0.57	-0.35	-2.00	230.98
	NORMAL	2,091.0	13.43	38.39	2,045.09	320.41	253.42	408.51	1.39	0.70	5.28	62.01
	NORMAL	2,186.0	13.90	39.05	2,137.40	337.92	267.46	430.95	0.52	0.49	0.69	18.67
	NORMAL	2,280.0	13.79	38.13	2,228.67	355.50	281.49	453.44	0.26	-0.12	-0.98	243.00
	NORMAL	2,374.0	13.58	38.18	2,320.00	372.99	295.23	475.68	0.22	-0.22	0.05	176.80
	NORMAL	2,469.0	13.49	37.68	2,412.36	390.53	308.90	497.91	0.16	-0.09	-0.53	232.19
	NORMAL	2,563.0	13.53	36.66	2,503.76	408.03	322.17	519.86	0.26	0.04	-1.09	279.03
	NORMAL	2,655.0	13.36	42.02	2,593.24	424.56	335.71	541.23	1.37	-0.18	5.83	100.37
	NORMAL	2,750.0	13.29	43.33	2,685.69	440.65	350.55	563.07	0.33	-0.07	1.38	103.69
	NORMAL	2,844.0	13.15	43.20	2,777.20	456.31	365.28	584.50	0.15	-0.15	-0.14	191.93
	NORMAL	2,938.0	13.27	39.32	2,868.71	472.45	379.44	605.95	0.95	0.13	-4.13	275.82
	NORMAL	3,032.0	13.15	39.65	2,960.22	489.03	393.10	627.43	0.15	-0.13	0.35	148.01
9/27/2013	NORMAL	3,126.0	12.95	39.56	3,051.80	505.38	406.63	648.66	0.21	-0.21	-0.10	185.76
	NORMAL	3,220.0	13.13	40.23	3,143.37	521.65	420.23	669.86	0.25	0.19	0.71	40.35
	NORMAL	3,312.0	12.67	41.79	3,233.05	537.15	433.70	690.38	0.63	-0.50	1.70	143.63
	NORMAL	3,406.0	12.49	38.83	3,324.79	552.76	446.95	710.84	0.71	-0.19	-3.15	252.96
	NORMAL	3,499.0	12.35	38.39	3,415.62	568.39	459.43	730.84	0.18	-0.15	-0.47	213.84
	NORMAL	3,593.0	12.26	39.87	3,507.46	583.93	472.07	750.87	0.35	-0.10	1.57	106.65
	NORMAL	3,687.0	12.06	39.43	3,599.35	599.17	484.70	770.67	0.23	-0.21	-0.47	204.65
	NORMAL	3,780.0	11.68	39.71	3,690.36	613.92	496.89	789.80	0.41	-0.41	0.30	171.52
	NORMAL	3,873.0	10.92	38.77	3,781.56	628.03	508.42	808.02	0.84	-0.82	-1.01	193.16
	NORMAL	3,968.0	10.51	38.97	3,874.90	641.78	519.50	825.68	0.43	-0.43	0.21	174.92
	NORMAL	4,060.0	9.89	38.51	3,965.45	654.48	529.70	841.98	0.68	-0.67	-0.50	187.26
	NORMAL	4,156.0	9.35	36.75	4,060.10	667.18	539.50	858.01	0.64	-0.56	-1.83	207.71
	NORMAL	4,250.0	8.88	39.09	4,152.91	678.93	548.64	872.90	0.64	-0.50	2.49	142.89
	NORMAL	4,344.0	8.47	39.65	4,245.84	689.90	557.64	887.08	0.45	-0.44	0.60	168.64
	NORMAL	4,438.0	7.92	40.69	4,338.88	700.14	566.27	900.47	0.61	-0.59	1.11	165.43
	NORMAL	4,532.0	7.81	41.16	4,431.99	709.85	574.70	913.32	0.14	-0.12	0.50	149.92
	NORMAL	4,624.0	7.50	38.50	4,523.17	719.26	582.55	925.57	0.51	-0.34	-2.89	227.50
9/28/2013	NORMAL	4,718.0	6.16	39.71	4,616.50	727.94	589.59	936.75	1.43	-1.43	1.29	174.47
	NORMAL	4,812.0	5.60	40.33	4,710.01	735.32	595.78	946.38	0.60	-0.60	0.66	173.84
	NORMAL	4,905.0	5.19	41.60	4,802.60	741.92	601.51	955.12	0.46	-0.44	1.37	164.39
	NORMAL	4,999.0	4.07	34.02	4,896.29	747.87	606.20	962.69	1.36	-1.19	-8.06	204.91
	NORMAL	5,093.0	3.55	34.57	4,990.08	753.03	609.72	968.91	0.55	-0.55	0.59	176.25
	NORMAL	5,186.0	3.46	36.41	5,082.91	757.66	613.02	974.59	0.15	-0.10	1.98	129.58
	NORMAL	5,281.0	3.30	34.92	5,177.74	762.21	616.29	980.18	0.19	-0.17	-1.57	208.03
	NORMAL	5,374.0	3.08	40.41	5,270.60	766.30	619.44	985.35	0.40	-0.24	5.90	128.48
	NORMAL	5,469.0	2.83	37.62	5,365.47	770.10	622.53	990.25	0.30	-0.26	-2.94	208.52
9/29/2013	NORMAL	5,563.0	2.51	41.10	5,459.37	773.18	625.65	994.62	0.38	-0.34	3.70	154.86
	NORMAL	5,657.0	1.67	70.64	5,553.31	775.18	628.30	997.82	1.43	-0.89	31.43	142.08
	NORMAL	5,750.0	1.59	79.52	5,646.27	775.86	630.84	999.95	0.28	-0.09	9.55	111.98
	NORMAL	5,846.0	0.62	91.12	5,742.25	776.10	632.67	1,001.27	1.03	-1.01	12.08	172.77
	NORMAL	5,939.0	0.39	138.71	5,835.25	775.85	633.38	1,001.53	0.49	-0.25	51.17	141.11
	NORMAL	6,034.0	0.47	158.20	5,930.25	775.24	633.74	1,001.28	0.17	0.08	20.52	71.30
	NORMAL	6,129.0	0.64	172.00	6,025.24	774.36	633.96	1,000.72	0.23	0.18	14.53	45.21
	NORMAL	6,223.0	0.77	197.77	6,119.24	773.24	633.84	999.77	0.36	0.14	27.41	80.93
	NORMAL	6,317.0	0.44	343.19	6,213.24	772.98	633.54	999.39	1.23	-0.35	154.70	167.56
	NORMAL	6,411.0	0.54	336.00	6,307.23	773.73	633.26	999.80	0.12	0.11	-7.65	324.78
	NORMAL	6,504.0	0.42	280.50	6,400.23	774.19	632.75	999.83	0.49	-0.13	-59.68	228.89
	NORMAL	6,598.0	0.56	277.58	6,494.23	774.32	631.95	999.43	0.15	0.15	-3.11	348.42
	NORMAL	6,693.0	0.81	253.68	6,589.22	774.19	630.85	998.64	0.39	0.26	-25.16	298.82
	NORMAL	6,788.0	0.94	251.07	6,684.21	773.75	629.47	997.43	0.14	0.14	-2.75	341.65
	NORMAL	6,883.0	1.49	257.59	6,779.19	773.23	627.52	995.81	0.60	0.58	6.86	17.38
9/30/2013	NORMAL	6,978.0	1.67	253.46	6,874.15	772.57	624.99	993.71	0.22	0.19	-4.35	325.61

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 (°)
9/30/2013	NORMAL	7,073.0	2.20	254.63	6,969.10	771.69	621.90	991.10	0.56	0.56	1.23	4.85
	NORMAL	7,166.0	2.39	253.81	7,062.02	770.68	618.32	988.06	0.21	0.20	-0.88	349.78
	NORMAL	7,260.0	2.02	249.24	7,155.95	769.54	614.89	985.03	0.44	-0.39	-4.86	203.15
	NORMAL	7,354.0	1.54	241.32	7,249.91	768.35	612.23	982.43	0.57	-0.51	-8.43	203.22
	NORMAL	7,448.0	1.13	257.45	7,343.88	767.54	610.22	980.54	0.59	-0.44	17.16	145.37
	NORMAL	7,543.0	0.53	248.97	7,438.87	767.18	608.89	979.43	0.64	-0.63	-8.93	187.35
	NORMAL	7,637.0	0.70	195.89	7,532.87	766.47	608.33	978.53	0.61	0.18	-56.47	258.93
	NORMAL	7,731.0	1.67	192.57	7,626.85	764.58	607.88	976.77	1.03	1.03	-3.53	354.29
	NORMAL	7,844.0	1.45	183.81	7,739.81	761.55	607.42	974.12	0.29	-0.19	-7.75	222.99
	NORMAL	7,909.0	1.45	183.81	7,804.78	759.91	607.31	972.77	0.00	0.00	0.00	0.00