

# Deviation Summary

PICEANCE VLY

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	RWF 21-35	Wellbore No.	00
Wellbore Legal Name	RWF 21-35	Common Wellbore Name	RWF 21-35
Project	RU 35-06S-094W	Site	RWF 11-35 Pad
Vertical Section Azimuth	59.42 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	9/5/2013	UWI	RWF 21-35
Active datum	KB @5,494.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	9/15/2013	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 (°)
9/15/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/15/2013	NORMAL	147.0	4.34	69.35	146.86	1.96	5.21	5.48	2.95	2.95	0.00	69.35
	NORMAL	238.0	7.25	57.14	237.39	6.29	13.25	14.61	3.46	3.20	-13.42	330.88
	NORMAL	329.0	7.51	60.78	327.63	12.31	23.27	26.30	0.59	0.29	4.00	62.74
	NORMAL	419.0	8.27	63.09	416.78	18.11	34.17	38.64	0.91	0.84	2.57	23.79
	NORMAL	509.0	11.08	57.46	505.50	25.70	47.24	53.74	3.29	3.12	-6.26	338.60
	NORMAL	599.0	10.55	56.76	593.90	34.86	61.42	70.61	0.61	-0.59	-0.78	193.58
	NORMAL	690.0	10.73	57.64	683.33	43.96	75.54	87.40	0.27	0.20	0.97	42.50
	NORMAL	781.0	10.58	59.07	772.76	52.79	89.87	104.22	0.33	-0.16	1.57	120.27
	NORMAL	871.0	10.55	59.77	861.24	61.19	104.07	120.73	0.15	-0.03	0.78	103.50
	NORMAL	962.0	11.56	59.42	950.55	70.02	119.12	138.17	1.11	1.11	-0.38	356.03
	NORMAL	1,057.0	11.52	58.69	1,043.63	79.79	135.42	157.18	0.16	-0.04	-0.77	254.32
	NORMAL	1,105.0	11.92	58.51	1,090.63	84.87	143.74	166.93	0.84	0.83	-0.38	354.69
	NORMAL	1,180.0	12.95	61.22	1,163.87	92.97	157.71	183.07	1.58	1.37	3.61	30.86
	NORMAL	1,243.0	13.03	61.28	1,225.25	99.78	170.13	197.23	0.13	0.13	0.10	9.60
	NORMAL	1,338.0	11.64	62.04	1,318.06	109.42	187.99	217.51	1.47	-1.46	0.80	173.71
	NORMAL	1,432.0	11.52	64.31	1,410.15	117.93	204.82	236.33	0.50	-0.13	2.41	105.86
	NORMAL	1,526.0	11.31	59.65	1,502.29	126.66	221.23	254.90	1.01	-0.22	-4.96	254.90
	NORMAL	1,621.0	10.56	58.10	1,595.56	135.97	236.66	272.92	0.85	-0.79	-1.63	200.65
	NORMAL	1,715.0	10.27	57.66	1,688.01	145.00	251.06	289.91	0.32	-0.31	-0.47	195.12
	NORMAL	1,810.0	10.29	57.81	1,781.49	154.05	265.39	306.85	0.04	0.02	0.16	53.31



## 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 (°)
9/15/2013	NORMAL	1,903.0	9.70	55.81	1,873.08	162.88	278.90	322.97	0.74	-0.63	-2.15	209.49
	NORMAL	1,997.0	10.75	58.38	1,965.58	171.92	292.92	339.64	1.22	1.12	2.73	24.75
	NORMAL	2,091.0	10.48	60.24	2,057.98	180.76	307.80	356.96	0.46	-0.29	1.98	129.15
	NORMAL	2,185.0	10.12	59.02	2,150.46	189.26	322.31	373.76	0.45	-0.38	-1.30	210.61
	NORMAL	2,279.0	11.72	62.13	2,242.76	197.97	337.83	391.56	1.81	1.70	3.31	21.75
	NORMAL	2,374.0	11.57	65.51	2,335.80	206.43	355.03	410.67	0.74	-0.16	3.56	104.05
	NORMAL	2,469.0	11.29	57.87	2,428.92	215.33	371.57	429.44	1.62	-0.29	-8.04	255.79
	NORMAL	2,563.0	11.43	56.46	2,521.08	225.37	387.13	447.94	0.33	0.15	-1.50	296.06
	NORMAL	2,655.0	11.19	56.31	2,611.30	235.36	402.15	465.96	0.26	-0.26	-0.16	186.91
	NORMAL	2,750.0	10.82	56.58	2,704.55	245.38	417.27	484.07	0.39	-0.39	0.28	172.20
	NORMAL	2,844.0	10.33	55.00	2,796.95	255.07	431.53	501.28	0.61	-0.52	-1.68	209.84
	NORMAL	2,938.0	11.18	60.11	2,889.30	264.45	446.34	518.80	1.36	0.90	5.44	50.82
	NORMAL	3,032.0	11.09	60.66	2,981.53	273.42	462.12	536.95	0.15	-0.10	0.59	130.55
	NORMAL	3,126.0	10.90	60.71	3,073.81	282.20	477.75	554.87	0.20	-0.20	0.05	177.15
	NORMAL	3,220.0	10.90	59.37	3,166.11	291.08	493.15	572.65	0.27	0.00	-1.43	269.34
	NORMAL	3,312.0	10.62	60.59	3,256.49	299.67	508.02	589.82	0.39	-0.30	1.33	141.47
	NORMAL	3,406.0	10.11	61.59	3,348.96	307.85	522.82	606.72	0.58	-0.54	1.06	161.06
	NORMAL	3,499.0	9.72	60.88	3,440.57	315.55	536.86	622.73	0.44	-0.42	-0.76	197.06
	NORMAL	3,593.0	10.24	59.11	3,533.15	323.70	550.96	639.02	0.64	0.55	-1.88	328.59
	NORMAL	3,687.0	10.01	57.73	3,625.68	332.36	565.04	655.54	0.36	-0.24	-1.47	225.85
	NORMAL	3,780.0	9.53	57.05	3,717.33	340.86	578.34	671.31	0.53	-0.52	-0.73	193.18
	NORMAL	3,873.0	8.86	58.10	3,809.14	348.83	590.88	686.16	0.74	-0.72	1.13	166.46
	NORMAL	3,968.0	8.54	57.52	3,903.05	356.48	603.04	700.53	0.35	-0.34	-0.61	195.04
	NORMAL	4,060.0	7.83	58.37	3,994.11	363.44	614.14	713.62	0.78	-0.77	0.92	170.75
	NORMAL	4,156.0	7.32	57.05	4,089.27	370.20	624.84	726.27	0.56	-0.53	-1.38	198.19
	NORMAL	4,250.0	6.74	58.69	4,182.56	376.32	634.58	737.77	0.65	-0.62	1.74	161.72
	NORMAL	4,344.0	6.22	59.14	4,275.96	381.80	643.66	748.38	0.56	-0.55	0.48	174.65
	NORMAL	4,438.0	5.89	59.48	4,369.44	386.86	652.19	758.29	0.35	-0.35	0.36	173.97
	NORMAL	4,532.0	5.57	61.72	4,462.97	391.47	660.36	767.67	0.42	-0.34	2.38	146.16
	NORMAL	4,624.0	4.85	63.15	4,554.59	395.34	667.76	776.01	0.80	-0.78	1.55	170.49
	NORMAL	4,718.0	4.26	62.95	4,648.29	398.72	674.41	783.46	0.63	-0.63	-0.21	181.44
	NORMAL	4,812.0	3.68	66.13	4,742.06	401.53	680.28	789.94	0.66	-0.62	3.38	160.79
	NORMAL	4,905.0	3.66	67.27	4,834.87	403.89	685.75	795.85	0.08	-0.02	1.23	105.90
	NORMAL	4,999.0	3.42	59.37	4,928.70	406.47	690.93	801.63	0.58	-0.26	-8.40	239.90
	NORMAL	5,093.0	2.75	62.68	5,022.56	408.94	695.35	806.68	0.74	-0.71	3.52	166.76
	NORMAL	5,186.0	3.38	58.93	5,115.43	411.38	699.68	811.65	0.71	0.68	-4.03	340.47
	NORMAL	5,281.0	3.56	57.27	5,210.25	414.42	704.56	817.40	0.22	0.19	-1.75	330.00
	NORMAL	5,374.0	2.87	56.06	5,303.10	417.28	708.92	822.61	0.75	-0.74	-1.30	185.01
	NORMAL	5,469.0	3.69	61.06	5,397.95	420.09	713.57	828.04	0.91	0.86	5.26	21.74
	NORMAL	5,563.0	3.61	63.35	5,491.76	422.88	718.86	834.01	0.18	-0.09	2.44	119.90
	NORMAL	5,657.0	3.21	60.70	5,585.59	425.49	723.80	839.60	0.46	-0.43	-2.82	200.19
	NORMAL	5,750.0	3.45	66.62	5,678.43	427.88	728.64	844.98	0.45	0.26	6.37	58.07
	NORMAL	5,846.0	3.07	62.16	5,774.28	430.22	733.56	850.41	0.48	-0.40	-4.65	211.51
	NORMAL	5,939.0	1.03	46.17	5,867.21	431.97	736.37	853.71	2.26	-2.19	-17.19	187.77
	NORMAL	6,034.0	0.57	55.06	5,962.20	432.83	737.37	855.01	0.50	-0.48	9.36	169.31
	NORMAL	6,129.0	0.42	23.73	6,057.20	433.42	737.90	855.77	0.32	-0.16	-32.98	225.95
	NORMAL	6,223.0	0.12	64.45	6,151.20	433.77	738.12	856.15	0.36	-0.32	43.32	166.62
	NORMAL	6,317.0	0.39	220.47	6,245.20	433.57	738.01	855.94	0.53	0.29	165.98	161.59
	NORMAL	6,411.0	0.75	249.45	6,339.20	433.11	737.22	855.03	0.48	0.38	30.83	53.78
	NORMAL	6,504.0	1.11	261.08	6,432.18	432.76	735.76	853.60	0.44	0.39	12.51	33.57
	NORMAL	6,598.0	1.43	241.23	6,526.16	432.06	733.83	851.58	0.57	0.34	-21.12	295.83
	NORMAL	6,693.0	1.98	237.32	6,621.12	430.60	731.41	848.75	0.59	0.58	-4.12	346.10
	NORMAL	6,788.0	0.96	263.14	6,716.09	429.62	729.24	846.38	1.25	-1.07	27.18	159.46
	NORMAL	6,883.0	1.25	273.38	6,811.07	429.58	727.42	844.80	0.37	0.31	10.78	39.44
	NORMAL	6,978.0	1.07	274.32	6,906.05	429.71	725.50	843.21	0.19	-0.19	0.99	174.43
	NORMAL	7,073.0	0.86	262.09	7,001.04	429.68	723.91	841.82	0.31	-0.22	-12.87	218.44

## 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 (°)
9/15/2013	NORMAL	7,166.0	0.88	264.62	7,094.02	429.52	722.51	840.53	0.05	0.02	2.72	63.77
	NORMAL	7,260.0	1.26	284.20	7,188.01	429.70	720.79	839.15	0.56	0.40	20.83	53.97
	NORMAL	7,354.0	1.41	271.94	7,281.98	430.00	718.63	837.44	0.34	0.16	-13.04	291.49
	NORMAL	7,448.0	1.74	266.82	7,375.95	429.96	716.05	835.20	0.38	0.35	-5.45	334.33
	NORMAL	7,543.0	2.25	246.76	7,470.89	429.14	712.89	832.07	0.90	0.54	-21.12	295.84
	NORMAL	7,637.0	2.80	237.91	7,564.80	427.19	709.25	827.94	0.72	0.59	-9.41	320.19
	NORMAL	7,731.0	2.91	232.22	7,658.68	424.51	705.42	823.28	0.32	0.12	-6.05	288.36
	NORMAL	7,825.0	3.17	233.15	7,752.55	421.49	701.46	818.33	0.28	0.28	0.99	11.21
	NORMAL	7,890.0	3.17	233.15	7,817.45	419.33	698.58	814.75	0.00	0.00	0.00	0.00