

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RWF 521-25	Wellbore No.	00
Wellbore Legal Name	RWF 521-25	Common Wellbore Name	RWF 521-25
Project	RU 25-06S-094W	Site	RWF 22-25 Pad
Vertical Section Azimuth	21.19 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	3/23/2014	UWI	RWF 521-25
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	3/23/2014	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 (°)
3/23/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/23/2014	NORMAL	74.0	0.26	119.53	74.00	-0.08	0.15	-0.02	0.35	0.35	0.00	119.53
	NORMAL	164.0	1.58	37.53	163.99	0.80	1.08	1.14	1.74	1.47	-91.11	268.53
	NORMAL	254.0	4.40	23.12	253.86	4.96	3.19	5.78	3.22	3.13	-16.01	337.80
	NORMAL	345.0	6.33	21.45	344.45	12.84	6.40	14.28	2.13	2.12	-1.84	354.54
	NORMAL	435.0	9.15	19.51	433.63	24.21	10.60	26.40	3.15	3.13	-2.16	353.74
	NORMAL	527.0	12.05	21.09	524.05	40.06	16.50	43.32	3.17	3.15	1.72	6.50
	NORMAL	617.0	14.69	21.27	611.60	59.47	24.02	64.13	2.93	2.93	0.20	0.99
	NORMAL	708.0	16.98	21.01	699.14	82.63	32.97	88.96	2.52	2.52	-0.29	358.10
	NORMAL	780.0	18.44	22.42	767.73	102.97	41.09	110.86	2.11	2.03	1.96	17.04
	NORMAL	871.0	20.36	21.24	853.56	131.03	52.31	141.08	2.15	2.11	-1.30	347.90
	NORMAL	962.0	21.78	18.13	938.47	161.83	63.30	173.77	1.99	1.56	-3.42	320.33
	NORMAL	1,056.0	21.14	20.12	1,025.96	194.32	74.56	208.13	1.03	-0.68	2.12	132.24
	NORMAL	1,103.0	21.37	20.30	1,069.76	210.31	80.45	225.17	0.51	0.49	0.38	15.92
3/25/2014	NORMAL	1,180.0	21.96	19.05	1,141.32	237.08	90.01	253.59	0.97	0.77	-1.62	321.39
	NORMAL	1,243.0	21.68	19.45	1,199.81	259.19	97.73	276.99	0.50	-0.44	0.63	152.22
	NORMAL	1,337.0	20.56	22.92	1,287.49	290.76	109.94	310.84	1.79	-1.19	3.69	133.46
	NORMAL	1,432.0	19.79	23.20	1,376.66	320.91	122.77	343.59	0.82	-0.81	0.29	172.98
	NORMAL	1,527.0	19.70	22.50	1,466.08	350.48	135.24	375.67	0.27	-0.09	-0.74	248.84
	NORMAL	1,622.0	19.87	22.15	1,555.47	380.23	147.45	407.82	0.22	0.18	-0.37	324.96
	NORMAL	1,717.0	20.36	21.79	1,644.68	410.53	159.67	440.49	0.53	0.52	-0.38	345.65

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 (")
3/25/2014	NORMAL	1,811.0	20.58	21.88	1,732.74	441.04	171.90	473.36	0.24	0.23	0.10	8.18
	NORMAL	1,905.0	20.72	22.23	1,820.70	471.77	184.35	506.51	0.20	0.15	0.37	41.56
	NORMAL	1,998.0	20.74	22.50	1,907.68	502.21	196.87	539.42	0.10	0.02	0.29	78.31
	NORMAL	2,092.0	20.07	20.01	1,995.78	532.74	208.76	572.18	1.17	-0.71	-2.65	231.18
	NORMAL	2,185.0	19.46	19.79	2,083.30	562.32	219.47	603.62	0.66	-0.66	-0.24	186.85
	NORMAL	2,279.0	18.91	19.45	2,172.08	591.41	229.84	634.50	0.60	-0.59	-0.36	191.32
	NORMAL	2,372.0	18.15	19.30	2,260.26	619.29	239.65	664.04	0.82	-0.82	-0.16	183.52
	NORMAL	2,465.0	19.05	20.24	2,348.40	647.20	249.69	693.70	1.02	0.97	1.01	18.87
	NORMAL	2,558.0	19.00	20.52	2,436.32	675.62	260.24	724.01	0.11	-0.05	0.30	118.85
	NORMAL	2,652.0	19.29	18.70	2,525.12	704.66	270.59	754.82	0.71	0.31	-1.94	295.05
	NORMAL	2,746.0	19.53	19.91	2,613.78	734.14	280.91	786.04	0.50	0.26	1.29	59.74
	NORMAL	2,839.0	19.42	19.95	2,701.46	763.29	291.48	817.04	0.12	-0.12	0.04	173.11
	NORMAL	2,932.0	19.96	20.79	2,789.02	792.66	302.39	848.37	0.66	0.58	0.90	28.06
	NORMAL	3,026.0	19.75	20.36	2,877.44	822.55	313.61	880.30	0.27	-0.22	-0.46	214.61
	NORMAL	3,120.0	20.45	21.09	2,965.71	852.76	325.05	912.60	0.79	0.74	0.78	20.06
	NORMAL	3,215.0	20.12	21.38	3,054.82	883.46	336.98	945.53	0.36	-0.35	0.31	163.19
	NORMAL	3,310.0	20.33	20.70	3,143.96	914.12	348.77	978.37	0.33	0.22	-0.72	311.46
	NORMAL	3,403.0	19.79	21.88	3,231.32	943.84	360.34	1,010.27	0.73	-0.58	1.27	143.70
	NORMAL	3,494.0	19.47	21.32	3,317.03	972.26	371.60	1,040.84	0.41	-0.35	-0.62	210.19
	NORMAL	3,588.0	19.63	22.28	3,405.61	1,001.47	383.28	1,072.29	0.38	0.17	1.02	63.98
NORMAL	3,682.0	20.36	22.86	3,493.94	1,031.14	395.62	1,104.43	0.80	0.78	0.62	15.47	
NORMAL	3,776.0	19.48	23.20	3,582.32	1,060.62	408.15	1,136.44	0.94	-0.94	0.36	172.66	
3/26/2014	NORMAL	3,870.0	20.28	22.08	3,670.72	1,090.12	420.44	1,168.39	0.94	0.85	-1.19	334.01
	NORMAL	3,964.0	19.85	21.39	3,759.01	1,120.08	432.39	1,200.64	0.52	-0.46	-0.73	208.51
	NORMAL	4,059.0	21.30	22.99	3,847.95	1,150.98	445.01	1,234.01	1.64	1.53	1.68	21.95
	NORMAL	4,152.0	20.48	23.87	3,934.84	1,181.41	458.19	1,267.15	0.94	-0.88	0.95	159.47
	NORMAL	4,246.0	20.31	23.20	4,022.94	1,211.44	471.27	1,299.88	0.31	-0.18	-0.71	233.63
	NORMAL	4,340.0	19.96	23.29	4,111.20	1,241.17	484.04	1,332.22	0.37	-0.37	0.10	174.98
	NORMAL	4,433.0	19.91	22.74	4,198.63	1,270.36	496.44	1,363.91	0.21	-0.05	-0.59	254.81
	NORMAL	4,527.0	19.06	22.21	4,287.24	1,299.33	508.43	1,395.26	0.92	-0.90	-0.56	191.50
	NORMAL	4,622.0	19.67	21.59	4,376.87	1,328.56	520.18	1,426.75	0.68	0.64	-0.65	341.08
	NORMAL	4,716.0	19.21	20.31	4,465.51	1,357.77	531.37	1,458.04	0.67	-0.49	-1.36	222.20
	NORMAL	4,808.0	17.69	18.88	4,552.78	1,385.19	541.14	1,487.14	1.72	-1.65	-1.55	195.90
	NORMAL	4,901.0	17.35	18.51	4,641.46	1,411.71	550.12	1,515.11	0.38	-0.37	-0.40	197.96
	NORMAL	4,996.0	15.68	18.44	4,732.54	1,437.32	558.68	1,542.08	1.76	-1.76	-0.07	180.65
	NORMAL	5,090.0	16.54	19.51	4,822.85	1,461.99	567.16	1,568.14	0.97	0.91	1.14	19.56
	NORMAL	5,185.0	16.27	21.09	4,913.98	1,487.15	576.47	1,594.97	0.55	-0.28	1.66	121.93
	NORMAL	5,279.0	15.32	22.21	5,004.43	1,510.93	585.90	1,620.55	1.06	-1.01	1.19	162.75
	NORMAL	5,371.0	12.68	23.82	5,093.69	1,531.42	594.57	1,642.80	2.90	-2.87	1.75	172.39
NORMAL	5,466.0	11.78	25.42	5,186.54	1,549.72	602.95	1,662.88	1.01	-0.95	1.68	160.14	
NORMAL	5,559.0	10.79	24.46	5,277.74	1,566.22	610.63	1,681.04	1.08	-1.06	-1.03	190.27	
NORMAL	5,653.0	9.57	24.88	5,370.25	1,581.32	617.56	1,697.62	1.30	-1.30	0.45	176.72	
3/27/2014	NORMAL	5,745.0	8.13	25.24	5,461.16	1,594.14	623.55	1,711.75	1.57	-1.57	0.39	177.98
	NORMAL	5,839.0	7.39	25.31	5,554.30	1,605.62	628.97	1,724.41	0.79	-0.79	0.07	179.30
	NORMAL	5,934.0	6.45	25.45	5,648.60	1,615.96	633.87	1,735.82	0.99	-0.99	0.15	179.04
	NORMAL	6,030.0	5.64	23.79	5,744.07	1,625.15	638.09	1,745.91	0.86	-0.84	-1.73	191.35
	NORMAL	6,123.0	5.51	17.15	5,836.63	1,633.59	641.25	1,754.93	0.71	-0.14	-7.14	255.31
	NORMAL	6,218.0	4.26	23.39	5,931.28	1,641.19	644.00	1,763.01	1.43	-1.32	6.57	160.06
	NORMAL	6,312.0	3.43	19.69	6,025.07	1,647.04	646.33	1,769.31	0.92	-0.88	-3.94	194.80
	NORMAL	6,406.0	2.50	12.55	6,118.94	1,651.69	647.73	1,774.14	1.06	-0.99	-7.60	198.12
	NORMAL	6,499.0	2.30	25.72	6,211.86	1,655.35	648.98	1,778.01	0.63	-0.22	14.16	116.43
NORMAL	6,592.0	1.42	47.93	6,304.81	1,657.81	650.64	1,780.90	1.21	-0.95	23.88	151.42	
3/28/2014	NORMAL	6,686.0	1.14	53.79	6,398.79	1,659.14	652.26	1,782.73	0.33	-0.30	6.23	157.85
	NORMAL	6,780.0	0.64	40.62	6,492.78	1,660.09	653.36	1,784.01	0.57	-0.53	-14.01	195.76
	NORMAL	6,874.0	0.44	48.60	6,586.78	1,660.73	653.97	1,784.82	0.23	-0.21	8.49	163.35
	NORMAL	6,969.0	1.10	21.14	6,681.77	1,661.82	654.57	1,786.06	0.78	0.69	-28.91	316.58

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 (")
3/28/2014	NORMAL	7,064.0	1.19	27.60	6,776.75	1,663.54	655.36	1,787.95	0.17	0.09	6.80	58.37
	NORMAL	7,158.0	1.52	104.27	6,870.73	1,664.10	657.02	1,789.07	1.81	0.35	81.56	119.57
3/29/2014	NORMAL	7,251.0	1.73	86.47	6,963.69	1,663.88	659.61	1,789.81	0.58	0.23	-19.14	283.53
	NORMAL	7,345.0	0.53	23.20	7,057.67	1,664.37	661.20	1,790.84	1.66	-1.28	-67.31	197.61
	NORMAL	7,439.0	0.59	279.46	7,151.67	1,664.85	660.90	1,791.17	0.94	0.06	-110.36	220.54
	NORMAL	7,532.0	0.98	243.93	7,244.66	1,664.58	659.71	1,790.49	0.65	0.42	-38.20	290.02
	NORMAL	7,625.0	0.56	184.96	7,337.65	1,663.78	658.96	1,789.47	0.90	-0.45	-63.41	214.77
	NORMAL	7,719.0	0.83	184.68	7,431.65	1,662.64	658.86	1,788.38	0.29	0.29	-0.30	359.14
	NORMAL	7,813.0	0.71	226.54	7,525.64	1,661.56	658.38	1,787.20	0.60	-0.13	44.53	122.44
	NORMAL	7,908.0	0.35	248.41	7,620.64	1,661.05	657.69	1,786.47	0.43	-0.38	23.02	161.30
	NORMAL	8,000.0	0.57	181.89	7,712.63	1,660.49	657.41	1,785.85	0.58	0.24	-72.30	256.77
	NORMAL	8,094.0	0.80	217.16	7,806.63	1,659.50	657.00	1,784.77	0.50	0.24	37.52	79.79
3/30/2014	NORMAL	8,188.0	0.77	204.64	7,900.62	1,658.40	656.34	1,783.51	0.18	-0.03	-13.32	253.86
	NORMAL	8,282.0	0.79	240.80	7,994.61	1,657.51	655.51	1,782.38	0.52	0.02	38.47	105.83
	NORMAL	8,375.0	1.20	280.28	8,087.60	1,657.37	653.99	1,781.70	0.83	0.44	42.45	79.87
	NORMAL	8,469.0	1.14	264.81	8,181.58	1,657.46	652.09	1,781.10	0.34	-0.06	-16.46	251.58
	NORMAL	8,563.0	1.62	233.69	8,275.55	1,656.59	650.09	1,779.57	0.93	0.51	-33.11	286.43
	NORMAL	8,658.0	1.48	237.06	8,370.52	1,655.13	647.98	1,777.44	0.18	-0.15	3.55	148.61
	NORMAL	8,752.0	2.37	226.32	8,464.46	1,653.13	645.55	1,774.70	1.02	0.95	-11.43	332.51
	NORMAL	8,847.0	2.20	224.65	8,559.39	1,650.47	642.85	1,771.25	0.19	-0.18	-1.76	200.56
	NORMAL	8,875.0	2.20	224.73	8,587.37	1,649.71	642.09	1,770.26	0.01	0.00	0.29	90.04
	NORMAL	8,940.0	2.20	224.73	8,652.32	1,647.94	640.34	1,767.97	0.00	0.00	0.00	0.00