

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RU 22-5	Wellbore No.	00
Wellbore Legal Name	RU 22-5	Common Wellbore Name	RU 22-5
Project	RU 05-07S-093W	Site	RU 23-5 Pad
Vertical Section Azimuth	232.02 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	9/4/2013	UWI	RU 22-5
Active datum	KB @7,627.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	9/4/2013	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 (°)
9/4/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/4/2013	NORMAL	85.0	0.88	205.31	85.00	-0.59	-0.28	0.58	1.04	1.04	0.00	205.31
	NORMAL	116.0	1.94	226.93	115.99	-1.16	-0.76	1.32	3.77	3.42	69.74	37.73
	NORMAL	178.0	2.46	239.06	177.94	-2.56	-2.67	3.68	1.12	0.84	19.56	48.01
	NORMAL	270.0	3.70	230.62	269.81	-5.46	-6.66	8.61	1.43	1.35	-9.17	335.66
	NORMAL	360.0	6.86	235.81	359.42	-10.33	-13.35	16.88	3.55	3.51	5.77	11.19
	NORMAL	432.0	7.71	229.76	430.83	-15.86	-20.60	26.00	1.59	1.18	-8.40	314.90
	NORMAL	524.0	8.15	229.28	521.95	-24.10	-30.25	38.68	0.48	0.48	-0.52	351.20
	NORMAL	615.0	8.88	227.94	611.95	-33.02	-40.35	52.13	0.83	0.80	-1.47	344.13
	NORMAL	707.0	8.18	230.49	702.93	-41.94	-50.68	65.75	0.86	-0.76	2.77	152.87
	NORMAL	800.0	7.21	235.94	795.10	-49.42	-60.61	78.19	1.30	-1.04	5.86	145.72
	NORMAL	892.0	7.65	234.09	886.32	-56.24	-70.36	90.07	0.54	0.48	-2.01	330.55
	NORMAL	984.0	8.97	233.30	977.36	-64.12	-81.07	103.36	1.44	1.43	-0.86	354.67
	NORMAL	1,075.0	9.21	232.10	1,067.21	-72.83	-92.50	117.73	0.34	0.26	-1.32	321.10
9/5/2013	NORMAL	1,171.0	10.46	229.43	1,161.80	-83.22	-105.19	134.12	1.39	1.30	-2.78	338.64
	NORMAL	1,267.0	8.55	235.42	1,256.48	-92.94	-117.68	149.95	2.24	-1.99	6.24	155.55
	NORMAL	1,362.0	8.53	235.94	1,350.43	-100.89	-129.33	164.03	0.08	-0.02	0.55	104.78
	NORMAL	1,457.0	8.30	238.39	1,444.41	-108.43	-141.01	177.88	0.45	-0.24	2.58	123.89
	NORMAL	1,552.0	8.14	235.84	1,538.43	-115.80	-152.41	191.40	0.42	-0.17	-2.68	245.05
	NORMAL	1,647.0	8.72	232.23	1,632.40	-123.99	-163.67	205.31	0.83	0.61	-3.80	315.83
	NORMAL	1,742.0	8.53	231.37	1,726.33	-132.80	-174.87	219.56	0.24	-0.20	-0.91	213.74

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (')	Azl. (')	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (')
9/5/2013	NORMAL	1,837.0	8.31	227.90	1,820.31	-141.80	-185.47	233.45	0.58	-0.23	-3.65	244.88
	NORMAL	1,932.0	8.31	231.61	1,914.31	-150.67	-195.94	247.16	0.56	0.00	3.91	91.84
	NORMAL	2,028.0	8.18	231.87	2,009.32	-159.19	-206.75	260.93	0.14	-0.14	0.27	164.13
	NORMAL	2,124.0	8.20	233.08	2,104.34	-167.52	-217.60	274.61	0.18	0.02	1.26	83.98
	NORMAL	2,219.0	7.91	233.29	2,198.40	-175.50	-228.25	287.92	0.31	-0.31	0.22	174.31
	NORMAL	2,313.0	7.90	232.35	2,291.51	-183.31	-238.55	300.84	0.14	-0.01	-1.00	265.11
	NORMAL	2,409.0	7.91	233.65	2,386.60	-191.26	-249.10	314.04	0.19	0.01	1.35	87.44
	NORMAL	2,505.0	7.74	232.60	2,481.70	-199.10	-259.55	327.11	0.23	-0.18	-1.09	219.54
	NORMAL	2,599.0	7.78	232.17	2,574.84	-206.85	-269.61	339.80	0.08	0.04	-0.46	304.35
9/6/2013	NORMAL	2,695.0	7.60	230.06	2,669.98	-214.91	-279.61	352.64	0.35	-0.19	-2.20	236.44
	NORMAL	2,791.0	8.18	229.08	2,765.07	-223.46	-289.63	365.81	0.62	0.60	-1.02	346.46
	NORMAL	2,886.0	8.53	233.83	2,859.06	-232.04	-300.43	379.60	0.81	0.37	5.00	65.47
	NORMAL	2,981.0	8.43	235.22	2,953.03	-240.17	-311.84	393.60	0.24	-0.11	1.46	116.69
	NORMAL	3,077.0	8.44	235.67	3,047.99	-248.16	-323.43	407.65	0.07	0.01	0.47	81.61
	NORMAL	3,173.0	9.06	231.98	3,142.87	-256.79	-335.21	422.24	0.87	0.65	-3.84	316.01
	NORMAL	3,268.0	8.88	232.77	3,236.71	-265.83	-346.94	437.05	0.23	-0.19	0.83	146.01
	NORMAL	3,363.0	8.62	231.10	3,330.60	-274.74	-358.32	451.50	0.38	-0.27	-1.76	223.51
	NORMAL	3,458.0	8.71	231.54	3,424.52	-283.68	-369.49	465.81	0.12	0.09	0.46	36.59
	NORMAL	3,554.0	8.40	232.12	3,519.45	-292.51	-380.72	480.10	0.34	-0.32	0.60	164.73
	NORMAL	3,649.0	8.21	231.32	3,613.46	-301.01	-391.49	493.82	0.23	-0.20	-0.84	210.91
	NORMAL	3,742.0	7.78	230.44	3,705.55	-309.17	-401.52	506.75	0.48	-0.46	-0.95	195.45
	NORMAL	3,838.0	7.41	231.93	3,800.71	-317.12	-411.41	519.43	0.44	-0.39	1.55	152.71
	NORMAL	3,932.0	7.14	229.92	3,893.95	-324.62	-420.65	531.33	0.39	-0.29	-2.14	222.32
	NORMAL	4,027.0	8.62	233.92	3,988.05	-332.62	-430.92	544.35	1.66	1.56	4.21	22.32
	NORMAL	4,122.0	8.73	233.65	4,081.97	-341.08	-442.48	558.67	0.12	0.12	-0.28	339.55
	NORMAL	4,217.0	8.46	233.52	4,175.90	-349.51	-453.91	572.87	0.28	-0.28	-0.14	184.05
	NORMAL	4,312.0	8.29	233.45	4,269.89	-357.74	-465.03	586.70	0.18	-0.18	-0.07	183.40
	NORMAL	4,407.0	9.28	229.85	4,363.77	-366.76	-476.39	601.20	1.19	1.04	-3.79	329.17
	NORMAL	4,502.0	9.06	229.26	4,457.56	-376.58	-487.91	616.32	0.25	-0.23	-0.62	202.85
	NORMAL	4,597.0	8.66	229.03	4,551.43	-386.15	-498.97	630.94	0.42	-0.42	-0.24	184.95
	NORMAL	4,692.0	8.32	230.14	4,645.38	-395.25	-509.65	644.95	0.40	-0.36	1.17	154.81
	NORMAL	4,787.0	8.06	227.45	4,739.42	-404.16	-519.83	658.46	0.49	-0.27	-2.83	234.52
	NORMAL	4,883.0	8.94	228.58	4,834.36	-413.64	-530.39	672.61	0.93	0.92	1.18	11.31
	NORMAL	4,978.0	8.57	230.01	4,928.25	-423.07	-541.34	687.06	0.45	-0.39	1.51	150.24
	NORMAL	5,074.0	8.07	227.99	5,023.24	-432.18	-551.83	700.93	0.60	-0.52	-2.10	209.31
	NORMAL	5,169.0	8.71	232.42	5,117.23	-441.03	-562.49	714.77	0.96	0.67	4.66	47.49
9/7/2013	NORMAL	5,265.0	8.89	232.17	5,212.10	-450.01	-574.11	729.46	0.19	0.19	-0.26	347.88
	NORMAL	5,361.0	9.07	231.85	5,306.92	-459.24	-585.92	744.44	0.19	0.19	-0.33	344.33
	NORMAL	5,456.0	9.23	230.93	5,400.71	-468.66	-597.72	759.55	0.23	0.17	-0.97	317.11
	NORMAL	5,552.0	8.97	232.60	5,495.51	-478.06	-609.64	774.73	0.39	-0.27	1.74	135.37
	NORMAL	5,646.0	8.79	233.04	5,588.38	-486.83	-621.20	789.24	0.20	-0.19	0.47	159.54
	NORMAL	5,742.0	8.57	233.01	5,683.28	-495.55	-632.78	803.72	0.23	-0.23	-0.03	181.16
	NORMAL	5,838.0	8.27	233.52	5,778.24	-503.96	-644.04	817.78	0.32	-0.31	0.53	166.27
9/8/2013	NORMAL	5,933.0	8.09	234.44	5,872.28	-511.90	-654.97	831.29	0.23	-0.19	0.97	144.43
	NORMAL	6,029.0	7.76	229.02	5,967.36	-520.08	-665.36	844.51	0.85	-0.34	-5.65	243.51
	NORMAL	6,124.0	8.55	237.66	6,061.41	-528.07	-676.17	857.94	1.53	0.83	9.09	61.52
	NORMAL	6,219.0	8.40	238.56	6,155.37	-535.46	-688.06	871.86	0.21	-0.16	0.95	138.96
	NORMAL	6,315.0	7.30	242.54	6,250.47	-541.94	-699.45	884.83	1.28	-1.15	4.15	155.66
	NORMAL	6,411.0	5.23	244.66	6,345.89	-546.62	-708.82	895.09	2.17	-2.16	2.21	174.68
	NORMAL	6,507.0	3.52	241.65	6,441.61	-549.89	-715.37	902.27	1.80	-1.78	-3.14	186.15
	NORMAL	6,602.0	1.32	257.65	6,536.52	-551.51	-719.00	906.13	2.40	-2.32	16.84	170.82
	NORMAL	6,698.0	1.09	251.53	6,632.50	-552.04	-720.95	907.99	0.27	-0.24	-6.38	206.19
9/9/2013	NORMAL	6,794.0	1.32	227.94	6,728.48	-553.07	-722.64	909.95	0.56	0.24	-24.57	282.77
	NORMAL	6,889.0	1.67	219.85	6,823.44	-554.86	-724.34	912.40	0.43	0.37	-8.52	324.82
	NORMAL	6,984.0	1.93	212.21	6,918.40	-557.28	-726.08	915.25	0.37	0.27	-8.04	313.43
9/10/2013	NORMAL	7,080.0	1.13	211.93	7,014.36	-559.45	-727.44	917.66	0.83	-0.83	-0.29	180.40

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 (°)
9/10/2013	NORMAL	7,175.0	0.70	35.46	7,109.36	-559.77	-727.60	917.99	1.93	-0.45	-185.76	181.35
	NORMAL	7,270.0	0.32	32.19	7,204.35	-559.08	-727.12	917.18	0.40	-0.40	-3.44	182.75
	NORMAL	7,366.0	0.26	273.26	7,300.35	-558.84	-727.19	917.09	0.52	-0.06	-123.89	207.04
	NORMAL	7,461.0	0.47	331.82	7,395.35	-558.48	-727.59	917.19	0.42	0.22	61.64	92.12
	NORMAL	7,556.0	0.60	259.04	7,490.35	-558.23	-728.27	917.57	0.68	0.14	-76.61	242.97
9/11/2013	NORMAL	7,652.0	0.61	83.11	7,586.35	-558.27	-728.25	917.58	1.26	0.01	-183.26	182.05
	NORMAL	7,741.0	0.70	125.72	7,675.34	-558.53	-727.34	917.02	0.54	0.10	47.88	101.31
	NORMAL	7,842.0	1.32	41.08	7,776.33	-558.01	-726.07	915.70	1.42	0.61	-83.80	246.31
	NORMAL	7,937.0	1.49	46.09	7,871.30	-556.33	-724.47	913.40	0.22	0.18	5.27	38.37
	NORMAL	8,032.0	1.47	47.89	7,966.27	-554.66	-722.67	910.96	0.05	-0.02	1.89	114.18
	NORMAL	8,128.0	1.08	39.59	8,062.25	-553.13	-721.18	908.84	0.45	-0.41	-8.65	201.23
	NORMAL	8,223.0	0.95	17.72	8,157.23	-551.69	-720.37	907.32	0.43	-0.14	-23.02	240.73
9/12/2013	NORMAL	8,319.0	0.67	25.81	8,253.22	-550.43	-719.89	906.16	0.31	-0.29	8.43	161.79
	NORMAL	8,415.0	0.24	312.52	8,349.22	-549.79	-719.79	905.69	0.67	-0.45	-76.34	200.93
	NORMAL	8,510.0	0.26	254.48	8,444.22	-549.71	-720.14	905.92	0.26	0.02	-61.09	245.10
	NORMAL	8,605.0	0.88	230.06	8,539.22	-550.24	-720.91	906.85	0.69	0.65	-25.71	326.09
	NORMAL	8,700.0	1.38	221.02	8,634.20	-551.57	-722.22	908.70	0.56	0.53	-9.52	335.82
	NORMAL	8,796.0	1.47	224.22	8,730.17	-553.32	-723.84	911.06	0.13	0.09	3.33	43.09
9/13/2013	NORMAL	8,890.0	1.67	219.94	8,824.13	-555.24	-725.56	913.59	0.25	0.21	-4.55	327.47
	NORMAL	8,985.0	1.87	222.10	8,919.09	-557.45	-727.49	916.47	0.22	0.21	2.27	19.53
	NORMAL	9,080.0	1.85	225.39	9,014.04	-559.68	-729.62	919.52	0.11	-0.02	3.46	102.25
	NORMAL	9,175.0	2.36	212.72	9,108.97	-562.40	-731.77	922.89	0.72	0.54	-13.34	311.17
	NORMAL	9,270.0	2.20	212.91	9,203.90	-565.57	-733.81	926.46	0.17	-0.17	0.20	177.39
	NORMAL	9,365.0	2.29	220.03	9,298.83	-568.56	-736.03	930.04	0.31	0.09	7.49	75.69
	NORMAL	9,460.0	1.94	230.16	9,393.76	-571.04	-738.48	933.50	0.54	-0.37	10.66	138.10
	NORMAL	9,555.0	1.85	225.48	9,488.71	-573.15	-740.81	936.63	0.19	-0.09	-4.93	237.49
	NORMAL	9,650.0	1.82	223.87	9,583.66	-575.31	-742.95	939.65	0.06	-0.03	-1.69	239.00
	NORMAL	9,745.0	1.67	224.86	9,678.62	-577.38	-744.97	942.52	0.16	-0.16	1.04	169.13
	NORMAL	9,838.0	1.75	219.14	9,771.58	-579.44	-746.82	945.24	0.20	0.09	-6.15	292.23
	NORMAL	9,934.0	1.53	207.13	9,867.54	-581.72	-748.33	947.84	0.42	-0.23	-12.51	231.47
	NORMAL	9,993.0	1.41	216.07	9,926.52	-583.01	-749.12	949.25	0.44	-0.20	15.15	122.04
	NORMAL	10,050.0	1.41	216.07	9,983.50	-584.14	-749.94	950.60	0.00	0.00	0.00	0.00