

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	NER 434-32	Wellbore No.	00
Wellbore Legal Name	NER 434-32	Common Wellbore Name	NER 434-32
Project	RU 05-07S-093W	Site	RU 23-5 Pad
Vertical Section Azimuth	59.68 (°) (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	4/11/2014	UWI	NER 434-32
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	4/11/2014	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 (°)
4/11/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/11/2014	NORMAL	87.0	0.35	251.02	87.00	-0.09	-0.25	-0.26	0.40	0.40	0.00	251.02
	NORMAL	186.0	0.44	111.45	186.00	-0.32	-0.18	-0.32	0.75	0.09	-140.98	202.62
	NORMAL	269.0	1.41	74.88	268.99	-0.17	1.10	0.86	1.31	1.17	-44.06	309.50
	NORMAL	361.0	3.52	58.18	360.90	1.61	4.59	4.78	2.40	2.29	-18.15	332.73
	NORMAL	453.0	6.51	56.69	452.54	5.96	11.35	12.81	3.25	3.25	-1.62	356.76
	NORMAL	545.0	7.92	56.78	543.80	12.30	21.01	24.35	1.53	1.53	0.10	0.50
	NORMAL	617.0	8.18	55.51	615.10	17.92	29.39	34.41	0.44	0.36	-1.76	325.00
	NORMAL	709.0	8.64	63.55	706.11	24.70	40.97	47.84	1.37	0.50	8.74	72.64
	NORMAL	800.0	8.97	63.77	796.04	30.88	53.45	61.73	0.36	0.36	0.24	5.94
	NORMAL	892.0	9.43	58.53	886.85	37.99	66.31	76.42	1.04	0.50	-5.70	296.17
	NORMAL	982.0	10.32	55.73	975.52	46.38	79.26	91.83	1.12	0.99	-3.11	330.27
	NORMAL	1,073.0	10.10	54.49	1,065.08	55.60	92.49	107.91	0.34	-0.24	-1.36	224.36
	NORMAL	1,123.0	9.85	58.14	1,114.32	60.41	99.70	116.55	1.36	-0.50	7.30	113.37
4/12/2014	NORMAL	1,263.0	9.15	61.83	1,252.40	71.98	119.68	139.65	0.66	-0.50	2.64	140.79
	NORMAL	1,358.0	9.15	62.62	1,346.20	79.02	133.05	154.74	0.13	0.00	0.83	90.39
	NORMAL	1,453.0	8.19	57.84	1,440.11	86.10	145.48	169.05	1.26	-1.01	-5.03	214.54
	NORMAL	1,548.0	10.37	58.32	1,533.86	94.19	158.49	184.36	2.30	2.29	0.51	2.27
	NORMAL	1,643.0	10.02	58.41	1,627.36	103.01	172.80	201.17	0.37	-0.37	0.09	177.44
	NORMAL	1,738.0	9.82	57.61	1,720.94	111.68	186.69	217.53	0.26	-0.21	-0.84	214.18
	NORMAL	1,833.0	9.52	58.90	1,814.59	120.08	200.25	233.48	0.39	-0.32	1.36	144.79

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 (")
4/12/2014	NORMAL	1,929.0	9.10	58.47	1,909.33	128.15	213.52	249.01	0.44	-0.44	-0.45	189.19
	NORMAL	2,024.0	10.64	61.83	2,002.92	136.22	227.66	265.29	1.73	1.62	3.54	22.17
	NORMAL	2,120.0	10.82	58.32	2,097.24	145.13	243.14	283.15	0.71	0.19	-3.66	283.67
	NORMAL	2,215.0	10.57	58.68	2,190.59	154.35	258.17	300.78	0.27	-0.26	0.38	165.21
4/13/2014	NORMAL	2,310.0	10.39	58.44	2,284.01	163.36	272.91	318.05	0.19	-0.19	-0.25	193.51
	NORMAL	2,405.0	10.44	61.34	2,377.44	171.97	287.77	335.22	0.55	0.05	3.05	85.98
	NORMAL	2,501.0	9.85	61.66	2,471.94	180.04	302.63	352.12	0.62	-0.61	0.33	174.70
	NORMAL	2,596.0	9.67	61.48	2,565.56	187.71	316.79	368.22	0.19	-0.19	-0.19	189.53
	NORMAL	2,691.0	9.24	61.50	2,659.27	195.16	330.50	383.82	0.45	-0.45	0.02	179.57
	NORMAL	2,787.0	9.10	60.81	2,754.05	202.54	343.90	399.11	0.19	-0.15	-0.72	217.81
	NORMAL	2,882.0	8.82	60.41	2,847.89	209.80	356.79	413.90	0.30	-0.29	-0.42	192.35
	NORMAL	2,978.0	8.56	61.32	2,942.79	216.86	369.46	428.40	0.31	-0.27	0.95	152.58
	NORMAL	3,074.0	8.30	61.16	3,037.75	223.63	381.80	442.47	0.27	-0.27	-0.17	185.08
	NORMAL	3,169.0	8.05	61.98	3,131.78	230.06	393.68	455.97	0.29	-0.26	0.86	155.40
	NORMAL	3,264.0	8.82	60.50	3,225.75	236.77	405.89	469.90	0.84	0.81	-1.56	343.52
	NORMAL	3,359.0	8.60	60.19	3,319.66	243.89	418.39	484.29	0.24	-0.23	-0.33	191.89
	NORMAL	3,455.0	8.49	60.10	3,414.59	250.99	430.76	498.55	0.12	-0.11	-0.09	186.89
	NORMAL	3,550.0	8.16	61.08	3,508.59	257.75	442.74	512.30	0.38	-0.35	1.03	157.22
	NORMAL	3,645.0	9.95	57.77	3,602.40	265.39	455.59	527.25	1.96	1.88	-3.48	342.13
	NORMAL	3,738.0	9.03	57.74	3,694.13	273.57	468.56	542.57	0.99	-0.99	-0.03	180.29
	NORMAL	3,834.0	8.59	58.01	3,789.00	281.39	481.01	557.27	0.46	-0.46	0.28	174.76
	NORMAL	3,928.0	9.67	59.47	3,881.81	289.12	493.76	572.18	1.17	1.15	1.55	12.83
	NORMAL	4,023.0	9.63	57.76	3,975.46	297.41	507.36	588.10	0.30	-0.04	-1.80	261.21
	NORMAL	4,118.0	8.97	59.46	4,069.21	305.41	520.46	603.45	0.75	-0.69	1.79	158.24
	NORMAL	4,213.0	8.70	58.91	4,163.09	312.89	532.99	618.04	0.30	-0.28	-0.58	197.10
4/14/2014	NORMAL	4,308.0	8.60	58.89	4,257.01	320.27	545.22	632.33	0.11	-0.11	-0.02	181.71
	NORMAL	4,403.0	8.21	59.85	4,350.98	327.34	557.17	646.21	0.44	-0.41	1.01	160.69
	NORMAL	4,498.0	9.61	58.93	4,444.84	334.84	569.83	660.92	1.48	1.47	-0.97	353.73
	NORMAL	4,593.0	9.32	58.78	4,538.54	342.92	583.20	676.54	0.31	-0.31	-0.16	184.79
	NORMAL	4,688.0	8.79	60.78	4,632.36	350.45	596.11	691.49	0.65	-0.56	2.11	150.28
	NORMAL	4,784.0	10.29	62.80	4,727.03	357.95	610.14	707.39	1.60	1.56	2.10	13.58
	NORMAL	4,879.0	10.38	61.66	4,820.49	365.89	625.22	724.42	0.24	0.09	-1.20	293.19
	NORMAL	4,974.0	10.20	62.54	4,913.96	373.84	640.22	741.37	0.25	-0.19	0.93	139.30
	NORMAL	5,070.0	9.50	59.20	5,008.54	381.81	654.56	757.78	0.94	-0.73	-3.48	217.59
	NORMAL	5,166.0	9.06	60.25	5,103.29	389.62	667.93	773.26	0.49	-0.46	1.09	159.47
	NORMAL	5,261.0	8.78	60.16	5,197.14	396.94	680.71	787.99	0.30	-0.29	-0.09	182.81
	NORMAL	5,357.0	8.62	61.31	5,292.03	404.04	693.38	802.51	0.25	-0.17	1.20	133.18
	NORMAL	5,452.0	8.97	53.84	5,385.92	411.83	705.61	816.99	1.26	0.37	-7.86	283.32
	NORMAL	5,548.0	8.57	53.39	5,480.80	420.51	717.39	831.55	0.42	-0.42	-0.47	189.51
	NORMAL	5,642.0	8.21	53.41	5,573.79	428.68	728.40	845.18	0.38	-0.38	0.02	179.55
	NORMAL	5,738.0	9.67	55.24	5,668.62	437.37	740.53	860.04	1.55	1.52	1.91	11.93
4/15/2014	NORMAL	5,834.0	9.42	56.25	5,763.29	446.33	753.69	875.92	0.31	-0.26	1.05	146.68
	NORMAL	5,930.0	9.15	55.07	5,858.04	455.06	766.48	891.37	0.34	-0.28	-1.23	214.61
	NORMAL	6,025.0	8.44	56.03	5,951.92	463.29	778.45	905.85	0.76	-0.75	1.01	168.79
	NORMAL	6,130.0	9.28	60.10	6,055.67	471.81	792.18	922.01	1.00	0.80	3.88	38.76
	NORMAL	6,216.0	9.17	60.84	6,140.55	478.61	804.18	935.79	0.19	-0.13	0.86	133.20
	NORMAL	6,311.0	9.28	59.32	6,234.32	486.20	817.37	951.02	0.28	0.12	-1.60	293.54
	NORMAL	6,407.0	8.96	60.02	6,329.11	493.89	830.51	966.24	0.35	-0.33	0.73	161.22
	NORMAL	6,503.0	8.51	61.69	6,424.00	500.99	843.24	980.81	0.54	-0.47	1.74	151.42
	NORMAL	6,599.0	5.70	59.49	6,519.25	508.78	853.60	992.68	2.94	-2.93	-2.29	184.44
	NORMAL	6,694.0	5.22	61.74	6,613.82	511.22	861.47	1,001.72	0.55	-0.51	2.37	157.08
4/16/2014	NORMAL	6,790.0	4.84	62.45	6,709.45	515.17	868.91	1,010.13	0.40	-0.40	0.74	171.05
	NORMAL	6,885.0	4.22	62.27	6,804.15	518.65	875.55	1,017.62	0.65	-0.65	-0.19	181.22
	NORMAL	6,980.0	3.39	51.51	6,898.94	522.02	880.85	1,023.89	1.15	-0.87	-11.33	215.42
	NORMAL	7,076.0	2.77	53.97	6,994.80	525.15	884.94	1,029.01	0.66	-0.65	2.56	169.19
	NORMAL	7,172.0	2.65	54.18	7,090.70	527.81	888.62	1,033.53	0.13	-0.13	0.22	175.37

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 (°)
4/16/2014	NORMAL	7,266.0	2.40	59.81	7,184.61	530.08	892.08	1,037.66	0.37	-0.27	5.99	138.02
	NORMAL	7,362.0	2.11	64.73	7,280.53	531.84	895.42	1,041.43	0.36	-0.30	5.13	148.72
	NORMAL	7,457.0	1.83	66.21	7,375.48	533.20	898.39	1,044.68	0.30	-0.29	1.56	170.44
	NORMAL	7,552.0	1.95	64.19	7,470.42	534.52	901.23	1,047.80	0.14	0.13	-2.13	329.95
	NORMAL	7,648.0	1.48	78.00	7,566.38	535.48	903.91	1,050.60	0.65	-0.49	14.39	145.44
	NORMAL	7,743.0	1.25	20.78	7,661.36	536.71	905.48	1,052.57	1.39	-0.24	-60.23	232.62
	NORMAL	7,838.0	0.97	355.04	7,756.34	538.48	905.78	1,053.73	0.59	-0.29	-27.09	228.23
	NORMAL	7,933.0	0.79	14.44	7,851.33	539.91	905.87	1,054.53	0.36	-0.19	20.42	130.59
	NORMAL	8,028.0	0.35	5.68	7,946.32	540.84	906.07	1,055.16	0.47	-0.46	-9.22	186.84
	NORMAL	8,124.0	0.98	353.87	8,042.32	541.94	906.01	1,055.67	0.67	0.66	-12.30	341.78
4/17/2014	NORMAL	8,219.0	0.66	330.44	8,137.31	543.23	905.65	1,056.01	0.48	-0.34	-24.66	215.03
	NORMAL	8,315.0	0.41	350.07	8,233.30	544.05	905.32	1,056.14	0.32	-0.26	20.45	153.30
	NORMAL	8,411.0	0.23	318.11	8,329.30	544.53	905.13	1,056.22	0.26	-0.19	-33.29	209.54
	NORMAL	8,507.0	0.26	282.97	8,425.30	544.72	904.79	1,056.02	0.16	0.03	-36.60	263.37
	NORMAL	8,601.0	0.26	218.98	8,519.30	544.60	904.45	1,055.67	0.29	0.00	-68.07	238.01
4/18/2014	NORMAL	8,694.0	0.40	64.62	8,612.30	544.58	904.61	1,055.79	0.69	0.15	-165.98	195.58
	NORMAL	8,788.0	0.07	116.54	8,706.30	544.69	904.96	1,056.15	0.38	-0.35	55.23	171.22
	NORMAL	8,883.0	0.61	156.79	8,801.30	544.20	905.21	1,056.12	0.59	0.57	42.37	44.90
	NORMAL	8,978.0	0.72	173.04	8,896.29	543.15	905.48	1,055.82	0.23	0.12	17.11	68.04
	NORMAL	9,073.0	0.40	207.76	8,991.29	542.26	905.40	1,055.30	0.48	-0.34	36.55	149.79
	NORMAL	9,167.0	0.74	232.72	9,085.28	541.60	904.76	1,054.42	0.44	0.36	26.55	49.06
	NORMAL	9,262.0	1.20	261.35	9,180.27	541.08	903.29	1,052.89	0.69	0.48	30.14	61.41
	NORMAL	9,357.0	1.58	263.63	9,275.24	540.79	901.00	1,050.77	0.40	0.40	2.40	9.42
	NORMAL	9,452.0	1.67	256.95	9,370.20	540.33	898.35	1,048.25	0.22	0.09	-7.03	292.05
	NORMAL	9,547.0	1.58	249.92	9,465.16	539.57	895.78	1,045.64	0.23	-0.09	-7.40	242.22
4/19/2014	NORMAL	9,643.0	2.11	247.72	9,561.11	538.44	892.90	1,042.59	0.56	0.55	-2.29	351.29
	NORMAL	9,737.0	2.21	247.09	9,655.05	537.08	889.63	1,039.08	0.11	0.11	-0.67	346.33
	NORMAL	9,832.0	2.90	248.00	9,749.95	535.47	885.71	1,034.88	0.73	0.73	0.96	3.82
	NORMAL	9,927.0	3.03	238.03	9,844.83	533.24	881.35	1,029.99	0.56	0.14	-10.49	279.14
	NORMAL	10,061.0	2.99	232.96	9,978.64	529.26	875.56	1,022.98	0.20	-0.03	-3.78	258.93
	NORMAL	10,117.0	2.99	232.96	10,034.57	527.50	873.23	1,020.08	0.00	0.00	0.00	0.00