

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	NER 24-32	Wellbore No.	00
Wellbore Legal Name	NER 24-32	Common Wellbore Name	NER 24-32
Project	RU 05-07S-093W	Site	RU 23-5 Pad
Vertical Section Azimuth	334.04 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	8/18/2014	UWI	NER 24-32
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	8/18/2014	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 (°)
8/18/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/18/2014	NORMAL	84.0	1.14	288.11	83.99	0.26	-0.79	0.58	1.36	1.36	0.00	288.11
	NORMAL	177.0	3.17	319.39	176.93	2.50	-3.35	3.71	2.45	2.18	33.63	46.35
	NORMAL	267.0	5.01	332.31	266.70	7.87	-6.79	10.05	2.27	2.04	14.36	33.15
	NORMAL	359.0	7.39	331.96	358.15	16.65	-11.44	19.98	2.59	2.59	-0.38	358.92
	NORMAL	451.0	10.73	335.39	448.99	29.66	-17.79	34.46	3.68	3.63	3.73	10.88
	NORMAL	543.0	13.28	330.73	538.97	46.67	-26.53	53.57	2.96	2.77	-5.07	336.90
	NORMAL	617.0	13.99	332.51	610.89	62.02	-34.81	71.00	1.11	0.96	2.41	31.45
	NORMAL	709.0	15.56	331.53	699.84	82.73	-45.83	94.44	1.73	1.71	-1.07	350.48
	NORMAL	800.0	16.96	329.05	787.20	104.85	-58.47	119.86	1.72	1.54	-2.73	332.42
8/19/2014	NORMAL	892.0	15.56	332.63	875.52	127.31	-71.05	145.57	1.87	-1.52	3.89	146.11
	NORMAL	982.0	16.27	331.96	962.07	149.16	-82.52	170.23	0.81	0.79	-0.74	345.17
	NORMAL	1,073.0	16.00	335.16	1,049.49	171.79	-93.78	195.51	1.02	-0.30	3.52	108.42
8/20/2014	NORMAL	1,263.0	16.66	337.22	1,231.82	220.67	-115.33	248.89	0.46	0.35	1.08	42.26
	NORMAL	1,357.0	16.81	337.58	1,321.84	245.66	-125.73	275.91	0.19	0.16	0.38	34.82
	NORMAL	1,453.0	16.21	337.72	1,413.88	270.89	-136.11	303.14	0.63	-0.63	0.15	176.27
	NORMAL	1,548.0	16.05	338.05	1,505.14	295.34	-146.04	329.47	0.19	-0.17	0.35	150.35
	NORMAL	1,643.0	15.92	333.31	1,596.48	319.16	-156.80	355.60	1.38	-0.14	-4.99	262.04
	NORMAL	1,738.0	15.37	332.39	1,687.96	341.96	-168.49	381.21	0.64	-0.58	-0.97	203.84
	NORMAL	1,833.0	15.54	330.64	1,779.52	364.21	-180.57	406.50	0.52	0.18	-1.84	289.18
	NORMAL	1,928.0	13.23	332.36	1,871.54	384.93	-191.85	430.07	2.47	-2.43	1.81	170.35

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 (")
8/20/2014	NORMAL	2,024.0	12.70	331.54	1,965.09	403.94	-201.97	451.60	0.58	-0.55	-0.85	198.74
	NORMAL	2,119.0	13.82	335.92	2,057.56	423.48	-211.56	473.37	1.58	1.18	4.61	44.04
	NORMAL	2,214.0	13.63	334.40	2,149.84	443.93	-221.05	495.90	0.43	-0.20	-1.60	241.48
	NORMAL	2,309.0	13.08	334.71	2,242.28	463.75	-230.48	517.85	0.58	-0.58	0.33	172.73
	NORMAL	2,405.0	15.13	336.03	2,335.38	485.02	-240.21	541.23	2.16	2.14	1.38	9.56
	NORMAL	2,501.0	14.85	335.05	2,428.11	507.62	-250.49	566.05	0.39	-0.29	-1.02	221.68
	NORMAL	2,595.0	16.51	335.02	2,518.61	530.65	-261.21	591.45	1.77	1.77	-0.03	359.71
	NORMAL	2,691.0	16.43	334.66	2,610.67	555.29	-272.78	618.67	0.14	-0.08	-0.38	231.74
	NORMAL	2,786.0	15.52	333.41	2,702.00	578.80	-284.22	644.81	1.02	-0.96	-1.32	200.11
	NORMAL	2,882.0	15.92	335.58	2,794.41	602.27	-295.41	670.82	0.74	0.42	2.26	56.82
	NORMAL	2,977.0	16.00	335.12	2,885.75	626.01	-306.31	696.93	0.16	0.08	-0.48	302.09
	NORMAL	3,073.0	15.74	335.29	2,978.09	649.84	-317.32	723.18	0.28	-0.27	0.18	169.94
	NORMAL	3,169.0	15.56	335.13	3,070.53	673.35	-328.17	749.07	0.19	-0.19	-0.17	193.41
	NORMAL	3,264.0	15.12	335.40	3,162.15	696.18	-338.69	774.19	0.47	-0.46	0.28	170.91
	NORMAL	3,359.0	14.71	334.83	3,253.94	718.36	-348.98	798.64	0.46	-0.43	-0.60	199.41
	NORMAL	3,454.0	16.00	336.01	3,345.55	741.24	-359.43	823.79	1.40	1.36	1.24	14.19
	NORMAL	3,550.0	16.03	336.38	3,437.83	765.47	-370.12	850.25	0.11	0.03	0.39	73.80
8/21/2014	NORMAL	3,645.0	15.39	335.98	3,529.28	789.00	-380.51	875.96	0.68	-0.67	-0.42	189.41
	NORMAL	3,738.0	15.61	335.32	3,618.89	811.65	-390.76	900.80	0.30	0.24	-0.71	320.96
	NORMAL	3,833.0	15.03	334.42	3,710.52	834.37	-401.41	925.90	0.66	-0.61	-0.95	201.86
	NORMAL	3,928.0	14.97	333.55	3,802.28	856.47	-412.20	950.49	0.25	-0.06	-0.92	254.66
	NORMAL	4,023.0	14.02	333.62	3,894.26	877.76	-422.77	974.26	1.00	-1.00	0.07	178.98
	NORMAL	4,118.0	15.50	335.25	3,986.12	899.60	-433.20	998.46	1.62	1.56	1.72	16.46
	NORMAL	4,213.0	15.06	335.17	4,077.76	922.33	-443.70	1,023.49	0.46	-0.46	-0.08	182.70
	NORMAL	4,308.0	17.02	335.36	4,169.06	946.17	-454.68	1,049.74	2.06	2.06	0.20	1.63
	NORMAL	4,403.0	16.56	335.19	4,260.01	971.10	-466.16	1,077.17	0.49	-0.48	-0.18	186.01
	NORMAL	4,498.0	16.16	335.62	4,351.16	995.43	-477.30	1,103.92	0.44	-0.42	0.45	163.36
	NORMAL	4,593.0	16.09	335.77	4,442.42	1,019.47	-488.16	1,130.30	0.09	-0.07	0.16	149.31
	NORMAL	4,688.0	15.59	336.96	4,533.82	1,043.23	-498.55	1,156.20	0.63	-0.53	1.25	147.56
	NORMAL	4,783.0	16.38	335.28	4,625.14	1,067.14	-509.15	1,182.35	0.96	0.83	-1.77	328.84
	NORMAL	4,879.0	16.06	334.61	4,717.32	1,091.43	-520.51	1,209.16	0.39	-0.33	-0.70	210.00
	NORMAL	4,974.0	15.76	333.14	4,808.88	1,114.81	-531.97	1,235.20	0.53	-0.32	-1.55	232.63
	NORMAL	5,070.0	15.78	332.81	4,901.07	1,138.06	-543.83	1,261.28	0.10	0.02	-0.34	282.41
	NORMAL	5,165.0	15.35	336.68	4,992.59	1,161.09	-554.71	1,286.76	1.18	-0.45	4.07	114.35
	NORMAL	5,261.0	14.85	335.46	5,085.27	1,183.95	-564.85	1,311.75	0.62	-0.52	-1.27	211.85
	NORMAL	5,356.0	15.42	334.43	5,176.98	1,206.42	-575.35	1,336.55	0.66	0.60	-1.08	334.24
	NORMAL	5,452.0	14.47	335.86	5,269.73	1,228.88	-585.77	1,361.30	1.06	-0.99	1.49	159.47
	NORMAL	5,548.0	15.73	335.26	5,362.41	1,251.64	-596.12	1,386.30	1.32	1.31	-0.63	352.64
8/22/2014	NORMAL	5,642.0	16.07	334.35	5,452.82	1,274.94	-607.08	1,412.05	0.45	0.36	-0.97	323.31
	NORMAL	5,738.0	16.37	333.24	5,545.00	1,299.00	-618.93	1,438.86	0.45	0.31	-1.16	313.52
	NORMAL	5,833.0	15.27	336.78	5,636.40	1,322.45	-629.89	1,464.75	1.54	-1.16	3.73	140.43
	NORMAL	5,929.0	15.23	336.68	5,729.02	1,345.65	-639.86	1,489.97	0.05	-0.04	-0.10	213.28
	NORMAL	6,024.0	15.07	336.04	5,820.72	1,368.39	-649.82	1,514.78	0.24	-0.17	-0.67	225.96
	NORMAL	6,120.0	14.85	335.74	5,913.46	1,391.01	-659.94	1,539.54	0.24	-0.23	-0.31	199.25
8/23/2014	NORMAL	6,215.0	14.86	335.92	6,005.29	1,413.23	-669.91	1,563.89	0.05	0.01	0.19	77.86
	NORMAL	6,311.0	14.66	335.64	6,098.12	1,435.54	-679.94	1,588.33	0.22	-0.21	-0.29	199.49
	NORMAL	6,407.0	14.14	335.57	6,191.10	1,457.28	-689.81	1,612.20	0.54	-0.54	-0.07	181.88
	NORMAL	6,502.0	13.86	334.79	6,283.28	1,478.14	-699.45	1,635.18	0.36	-0.29	-0.82	213.60
	NORMAL	6,598.0	12.22	334.11	6,376.80	1,497.69	-708.79	1,656.84	1.72	-1.71	-0.71	185.01
	NORMAL	6,694.0	11.43	332.06	6,470.76	1,515.23	-717.68	1,676.50	0.93	-0.82	-2.14	207.00
	NORMAL	6,790.0	10.30	333.10	6,565.04	1,531.29	-726.02	1,694.59	1.19	-1.18	1.08	170.67
	NORMAL	6,885.0	8.92	332.64	6,658.71	1,545.40	-733.25	1,710.45	1.45	-1.45	-0.48	182.96
	NORMAL	6,980.0	7.73	333.62	6,752.70	1,557.67	-739.47	1,724.20	1.26	-1.25	1.03	173.68
	NORMAL	7,075.0	6.69	335.56	6,846.95	1,568.43	-744.60	1,736.12	1.12	-1.09	2.04	167.78
	NORMAL	7,171.0	5.16	333.30	6,942.44	1,577.38	-748.85	1,746.03	1.61	-1.59	-2.35	187.55
	NORMAL	7,266.0	3.31	326.17	7,037.17	1,583.48	-752.30	1,753.02	2.02	-1.95	-7.51	192.35

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 (")
8/23/2014	NORMAL	7,362.0	2.96	326.16	7,133.03	1,587.84	-755.22	1,758.22	0.36	-0.36	-0.01	180.08
8/24/2014	NORMAL	7,457.0	2.29	323.20	7,227.93	1,591.39	-757.73	1,762.51	0.72	-0.71	-3.12	189.96
	NORMAL	7,552.0	2.29	316.32	7,322.85	1,594.29	-760.17	1,766.18	0.29	0.00	-7.24	266.56
	NORMAL	7,648.0	0.78	296.42	7,418.82	1,595.96	-762.08	1,768.53	1.64	-1.57	-20.73	189.68
	NORMAL	7,743.0	0.44	269.70	7,513.81	1,596.25	-763.03	1,769.20	0.46	-0.36	-28.13	207.08
	NORMAL	7,838.0	0.54	356.39	7,608.81	1,596.69	-763.42	1,769.77	0.71	0.11	91.25	127.17
	NORMAL	7,933.0	0.45	41.53	7,703.81	1,597.42	-763.20	1,770.33	0.41	-0.09	47.52	124.91
	NORMAL	8,028.0	0.33	94.09	7,798.80	1,597.68	-762.68	1,770.33	0.38	-0.13	55.33	133.58
	NORMAL	8,124.0	0.71	58.78	7,894.80	1,597.97	-761.90	1,770.25	0.50	0.40	-36.78	301.29
	NORMAL	8,219.0	0.74	44.84	7,989.79	1,598.71	-760.96	1,770.50	0.19	0.03	-14.67	272.64
	NORMAL	8,315.0	0.53	62.05	8,085.79	1,599.36	-760.13	1,770.72	0.29	-0.22	17.93	146.14
	NORMAL	8,410.0	0.24	168.59	8,180.79	1,599.37	-759.70	1,770.55	0.67	-0.31	112.15	158.97
	NORMAL	8,506.0	0.20	232.01	8,276.78	1,599.07	-759.80	1,770.32	0.24	-0.04	66.06	130.08
	NORMAL	8,601.0	0.37	96.31	8,371.78	1,598.93	-759.62	1,770.12	0.56	0.18	-142.84	209.07
	NORMAL	8,694.0	0.27	128.93	8,464.78	1,598.76	-759.15	1,769.76	0.22	-0.11	35.08	134.41
	NORMAL	8,788.0	0.74	166.28	8,558.78	1,598.03	-758.84	1,768.97	0.59	0.50	39.73	54.67
8/25/2014	NORMAL	8,882.0	0.77	152.39	8,652.77	1,596.88	-758.40	1,767.74	0.20	0.03	-14.78	272.32
	NORMAL	8,977.0	0.77	88.47	8,747.76	1,596.33	-757.47	1,766.84	0.86	0.00	-67.28	238.04
	NORMAL	9,072.0	0.74	95.12	8,842.76	1,596.30	-756.22	1,766.26	0.10	-0.03	7.00	112.20
	NORMAL	9,167.0	0.46	146.98	8,937.75	1,595.92	-755.40	1,765.56	0.61	-0.29	54.59	141.57
8/26/2014	NORMAL	9,262.0	0.55	189.10	9,032.75	1,595.15	-755.26	1,764.81	0.39	0.09	44.34	98.03
	NORMAL	9,357.0	0.65	229.05	9,127.74	1,594.35	-755.74	1,764.30	0.44	0.11	42.05	97.06
	NORMAL	9,452.0	1.24	214.27	9,222.73	1,593.15	-756.73	1,763.65	0.67	0.62	-15.56	330.05
	NORMAL	9,547.0	1.84	209.32	9,317.70	1,590.97	-758.05	1,762.27	0.65	0.63	-5.21	345.02
	NORMAL	9,642.0	2.45	208.87	9,412.63	1,587.86	-759.78	1,760.23	0.64	0.64	-0.47	358.19
	NORMAL	9,737.0	2.40	228.81	9,507.54	1,584.77	-762.26	1,758.54	0.89	-0.05	20.99	103.32
	NORMAL	9,831.0	3.16	235.84	9,601.43	1,582.02	-765.88	1,757.65	0.88	0.81	7.48	27.70
	NORMAL	9,926.0	3.12	244.02	9,696.29	1,579.42	-770.37	1,757.28	0.47	-0.04	8.61	99.18
	NORMAL	10,021.0	2.99	242.92	9,791.16	1,577.16	-774.90	1,757.23	0.15	-0.14	-1.16	203.72
	NORMAL	10,116.0	2.84	237.47	9,886.03	1,574.76	-779.09	1,756.91	0.33	-0.16	-5.74	238.87
	NORMAL	10,211.0	2.87	231.54	9,980.92	1,572.02	-782.94	1,756.13	0.31	0.03	-6.24	272.83
	NORMAL	10,272.0	2.81	232.24	10,041.84	1,570.15	-785.32	1,755.49	0.11	-0.10	1.15	150.32
	NORMAL	10,328.0	2.81	232.24	10,097.77	1,568.47	-787.49	1,754.93	0.60	0.00	0.00	0.00