

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	NER 343-32	Wellbore No.	00
Wellbore Legal Name	NER 343-32	Common Wellbore Name	NER 343-32
Project	RU 05-07S-093W	Site	RU 23-5 Pad
Vertical Section Azimuth	43.91 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	6/19/2014	UWI	NER 343-32
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	6/19/2014	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 (°)
6/19/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/19/2014	NORMAL	81.0	1.67	35.42	80.99	0.96	0.68	1.17	2.06	2.06	0.00	35.42
	NORMAL	177.0	3.61	51.42	176.88	3.99	3.86	5.55	2.14	2.02	16.67	28.92
	NORMAL	267.0	5.98	58.18	266.56	8.23	10.06	12.90	2.70	2.63	7.51	16.80
	NORMAL	359.0	9.94	56.78	357.66	15.11	20.78	25.29	4.31	4.30	-1.52	356.50
	NORMAL	451.0	13.81	53.17	447.67	26.04	36.21	43.88	4.28	4.21	-3.92	347.36
	NORMAL	543.0	17.95	46.93	536.15	42.31	55.37	68.88	4.86	4.50	-6.78	334.56
	NORMAL	617.0	20.56	40.87	606.01	59.93	72.21	93.25	4.44	3.53	-8.19	319.67
	NORMAL	709.0	21.46	41.60	691.89	84.73	93.95	126.20	1.02	0.98	0.79	16.56
	NORMAL	800.0	23.92	41.92	775.84	110.91	117.33	161.28	2.71	2.70	0.35	3.02
	NORMAL	891.0	25.18	41.77	858.62	139.08	142.55	199.06	1.39	1.38	-0.16	357.10
	NORMAL	982.0	25.26	40.19	940.94	168.35	167.98	237.78	0.75	0.09	-1.74	276.06
	NORMAL	1,073.0	26.56	41.69	1,022.79	198.38	194.04	277.49	1.60	1.43	1.65	27.43
	NORMAL	1,133.0	27.08	40.98	1,076.34	218.70	211.92	304.53	1.02	0.87	-1.18	328.05
6/21/2014	NORMAL	1,263.0	28.07	40.68	1,191.57	264.24	251.26	364.62	0.77	0.76	-0.23	351.88
	NORMAL	1,358.0	28.24	39.10	1,275.33	298.63	280.01	409.33	0.80	0.18	-1.66	282.15
	NORMAL	1,453.0	27.79	42.49	1,359.21	332.41	309.14	453.87	1.74	-0.47	3.57	107.27
	NORMAL	1,548.0	28.28	41.34	1,443.06	365.63	338.97	498.49	0.77	0.52	-1.21	311.69
	NORMAL	1,643.0	27.77	43.89	1,526.92	398.48	369.18	543.11	1.37	-0.54	2.68	114.18
	NORMAL	1,738.0	27.17	44.52	1,611.21	429.89	399.73	586.93	0.70	-0.63	0.66	154.44
	NORMAL	1,834.0	26.90	44.44	1,696.72	461.03	430.30	630.56	0.28	-0.28	-0.08	187.63

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 (°)
6/21/2014	NORMAL	1,929.0	27.31	43.57	1,781.29	492.16	460.37	673.85	0.60	0.43	-0.92	315.58
	NORMAL	2,025.0	27.22	46.23	1,866.62	523.31	491.40	717.81	1.27	-0.09	2.77	95.41
	NORMAL	2,120.0	27.17	45.03	1,951.12	553.67	522.44	761.20	0.58	-0.05	-1.26	264.26
	NORMAL	2,215.0	27.01	46.06	2,035.70	583.97	553.32	804.45	0.52	-0.17	1.08	109.29
	NORMAL	2,310.0	27.26	44.92	2,120.25	614.34	584.21	847.76	0.61	0.26	-1.20	295.17
	NORMAL	2,405.0	27.29	44.77	2,204.68	645.21	614.91	891.29	0.08	0.03	-0.16	293.51
	NORMAL	2,501.0	26.82	45.47	2,290.18	676.02	645.85	934.94	0.59	-0.49	0.73	146.20
	NORMAL	2,596.0	26.11	45.78	2,375.22	705.63	676.11	977.26	0.76	-0.75	0.33	169.13
	NORMAL	2,692.0	25.38	45.59	2,461.69	734.76	705.95	1,018.94	0.77	-0.76	-0.20	186.36
	NORMAL	2,787.0	24.89	44.59	2,547.70	763.24	734.53	1,059.28	0.68	-0.52	-1.05	220.47
	NORMAL	2,882.0	25.77	44.42	2,633.56	792.23	763.02	1,099.92	0.93	0.93	-0.18	355.20
	NORMAL	2,978.0	26.13	44.51	2,719.88	822.21	792.44	1,141.93	0.38	0.38	0.09	6.28
	NORMAL	3,074.0	26.40	45.15	2,805.97	852.34	822.39	1,184.40	0.41	0.28	0.67	46.66
	NORMAL	3,170.0	26.70	45.21	2,891.85	882.58	852.83	1,227.30	0.31	0.31	0.06	5.14
	NORMAL	3,264.0	25.78	42.89	2,976.16	912.44	881.73	1,268.85	1.47	-0.98	-2.47	227.07
	NORMAL	3,359.0	25.64	43.84	3,061.76	942.40	910.03	1,310.06	0.46	-0.15	1.00	109.19
	NORMAL	3,455.0	25.64	43.30	3,148.31	972.50	938.66	1,351.60	0.24	0.00	-0.56	269.76
	NORMAL	3,550.0	25.52	43.35	3,233.99	1,002.34	966.80	1,392.62	0.13	-0.13	0.05	169.82
	NORMAL	3,645.0	25.45	45.13	3,319.75	1,031.62	995.32	1,433.49	0.81	-0.07	1.87	96.03
	NORMAL	3,738.0	26.36	43.50	3,403.41	1,060.69	1,023.69	1,474.11	1.24	0.98	-1.75	321.22
	NORMAL	3,834.0	26.75	42.08	3,489.28	1,092.19	1,052.84	1,517.02	0.78	0.41	-1.48	300.93
	NORMAL	3,928.0	26.61	42.60	3,573.27	1,123.39	1,081.27	1,559.21	0.29	-0.15	0.55	121.18
	NORMAL	4,023.0	26.71	42.01	3,658.17	1,154.91	1,109.96	1,601.82	0.30	0.11	-0.62	290.43
	NORMAL	4,118.0	26.55	42.69	3,743.10	1,186.38	1,138.64	1,644.39	0.36	-0.17	0.72	118.00
	NORMAL	4,213.0	26.06	46.16	3,828.26	1,216.44	1,168.09	1,686.47	1.70	-0.52	3.65	109.22
	NORMAL	4,308.0	25.99	45.55	3,913.63	1,245.47	1,198.00	1,728.12	0.29	-0.07	-0.64	255.07
	NORMAL	4,403.0	25.92	46.62	3,999.05	1,274.31	1,227.95	1,769.67	0.50	-0.07	1.13	98.98
	NORMAL	4,498.0	25.50	46.52	4,084.64	1,302.64	1,257.88	1,810.84	0.44	-0.44	-0.11	185.85
	NORMAL	4,593.0	25.58	45.54	4,170.36	1,331.08	1,287.36	1,851.77	0.45	0.08	-1.03	280.28
6/22/2014	NORMAL	4,688.0	24.86	44.83	4,256.31	1,359.61	1,316.07	1,892.24	0.82	-0.76	-0.75	202.47
	NORMAL	4,784.0	24.80	46.61	4,343.43	1,387.75	1,344.93	1,932.52	0.78	-0.06	1.85	95.40
	NORMAL	4,879.0	25.44	45.30	4,429.45	1,415.79	1,373.92	1,972.83	0.89	0.67	-1.38	318.42
	NORMAL	4,975.0	26.00	44.69	4,515.94	1,445.25	1,403.37	2,014.48	0.65	0.58	-0.64	334.42
	NORMAL	5,070.0	25.71	44.16	4,601.43	1,474.84	1,432.37	2,055.91	0.39	-0.31	-0.56	218.32
	NORMAL	5,166.0	25.29	44.47	4,688.07	1,504.41	1,461.24	2,097.23	0.46	-0.44	0.32	162.51
	NORMAL	5,261.0	26.14	43.85	4,773.67	1,533.98	1,489.95	2,138.45	0.94	0.89	-0.65	342.16
	NORMAL	5,357.0	25.62	44.22	4,860.04	1,564.11	1,519.08	2,180.35	0.57	-0.54	0.39	162.91
	NORMAL	5,452.0	27.15	42.17	4,945.14	1,594.90	1,547.96	2,222.56	1.87	1.61	-2.16	328.31
	NORMAL	5,548.0	26.91	42.57	5,030.65	1,627.13	1,577.36	2,266.17	0.31	-0.25	0.42	143.04
	NORMAL	5,643.0	26.28	43.19	5,115.60	1,658.29	1,606.30	2,308.70	0.72	-0.66	0.65	156.50
	NORMAL	5,738.0	25.90	43.63	5,200.92	1,688.65	1,635.01	2,350.47	0.45	-0.40	0.46	153.21
	NORMAL	5,834.0	25.68	43.52	5,287.36	1,718.90	1,663.80	2,392.24	0.23	-0.23	-0.11	192.22
	NORMAL	5,930.0	23.53	43.28	5,374.64	1,747.94	1,691.26	2,432.21	2.24	-2.24	-0.25	182.55
	NORMAL	6,025.0	23.29	42.94	5,461.82	1,775.50	1,717.06	2,469.95	0.29	-0.25	-0.36	209.22
	NORMAL	6,120.0	22.46	42.97	5,549.35	1,802.52	1,742.22	2,506.87	0.87	-0.87	0.03	179.21
6/23/2014	NORMAL	6,216.0	20.92	42.46	5,638.55	1,828.59	1,766.29	2,542.34	1.62	-1.60	-0.53	186.74
	NORMAL	6,311.0	19.31	42.74	5,727.75	1,852.64	1,788.40	2,575.00	1.70	-1.69	0.29	176.71
	NORMAL	6,407.0	19.06	42.46	5,818.42	1,875.86	1,809.76	2,606.54	0.28	-0.26	-0.29	200.07
	NORMAL	6,503.0	17.49	44.73	5,909.57	1,897.67	1,830.49	2,636.64	1.80	-1.64	2.36	156.69
	NORMAL	6,599.0	17.07	45.70	6,001.24	1,917.76	1,850.73	2,665.15	0.53	-0.44	1.01	146.01
	NORMAL	6,694.0	16.23	46.98	6,092.26	1,936.56	1,870.41	2,692.34	0.96	-0.88	1.35	157.03
	NORMAL	6,790.0	15.46	45.41	6,184.61	1,954.70	1,889.33	2,718.53	0.92	-0.80	-1.64	208.35
	NORMAL	6,885.0	13.89	42.40	6,276.51	1,972.01	1,906.04	2,742.59	1.84	-1.65	-3.17	204.46
6/24/2014	NORMAL	6,980.0	12.79	44.16	6,368.94	1,987.97	1,921.06	2,764.50	1.23	-1.16	1.85	160.59
	NORMAL	7,076.0	12.59	45.12	6,462.60	2,002.98	1,935.87	2,785.59	0.30	-0.21	1.00	133.95
	NORMAL	7,172.0	11.96	42.75	6,556.40	2,017.66	1,950.04	2,805.99	0.84	-0.66	-2.47	217.50

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 (°)
6/24/2014	NORMAL	7,266.0	11.20	41.09	6,648.49	2,031.70	1,962.65	2,824.85	0.88	-0.81	-1.77	202.86
	NORMAL	7,362.0	10.54	40.40	6,742.77	2,045.41	1,974.47	2,842.92	0.70	-0.69	-0.72	190.81
	NORMAL	7,458.0	9.66	38.73	6,837.28	2,058.38	1,985.20	2,859.71	0.97	-0.92	-1.74	197.59
	NORMAL	7,553.0	8.28	34.31	6,931.12	2,070.25	1,994.04	2,874.39	1.62	-1.45	-4.65	204.37
6/25/2014	NORMAL	7,649.0	4.99	25.41	7,026.46	2,079.73	1,999.73	2,885.17	3.58	-3.43	-9.27	192.97
	NORMAL	7,744.0	4.06	29.68	7,121.17	2,086.39	2,003.17	2,892.35	1.04	-0.98	4.49	162.21
	NORMAL	7,839.0	3.48	39.85	7,215.96	2,091.52	2,006.68	2,898.49	0.93	-0.61	10.71	135.94
	NORMAL	7,934.0	2.46	41.86	7,310.83	2,095.25	2,009.89	2,903.40	1.08	-1.07	2.12	175.17
	NORMAL	8,029.0	2.64	50.41	7,405.74	2,098.17	2,012.94	2,907.61	0.44	0.19	9.00	68.99
	NORMAL	8,125.0	1.48	52.26	7,501.67	2,100.33	2,015.62	2,911.03	1.21	-1.21	1.93	177.64
	NORMAL	8,220.0	1.08	66.91	7,596.65	2,101.44	2,017.42	2,913.07	0.54	-0.42	15.42	147.88
	NORMAL	8,316.0	1.07	61.42	7,692.63	2,102.22	2,019.04	2,914.76	0.11	-0.01	-5.72	261.71
	NORMAL	8,411.0	0.80	97.11	7,787.62	2,102.56	2,020.47	2,916.00	0.66	-0.28	37.57	132.00
	NORMAL	8,507.0	0.98	98.94	7,883.61	2,102.35	2,021.95	2,916.88	0.19	0.19	1.91	9.89
	NORMAL	8,602.0	1.32	86.88	7,978.59	2,102.29	2,023.84	2,918.14	0.44	0.36	-12.69	318.42
	NORMAL	8,695.0	1.42	82.02	8,071.56	2,102.50	2,026.05	2,919.83	0.16	0.11	-5.23	308.27
	NORMAL	8,789.0	1.28	99.30	8,165.54	2,102.50	2,028.24	2,921.34	0.46	-0.15	18.38	117.48
	NORMAL	8,883.0	1.06	120.13	8,259.52	2,101.89	2,030.03	2,922.15	0.51	-0.23	22.16	127.50
	NORMAL	8,978.0	0.37	345.89	8,354.52	2,101.75	2,030.72	2,922.52	1.42	-0.73	-141.31	191.37
	NORMAL	9,073.0	0.78	325.60	8,449.51	2,102.58	2,030.28	2,922.81	0.48	0.43	-21.36	323.20
6/26/2014	NORMAL	9,168.0	0.29	341.88	8,544.51	2,103.34	2,029.84	2,923.06	0.53	-0.52	17.14	170.79
	NORMAL	9,263.0	0.18	325.84	8,639.51	2,103.69	2,029.68	2,923.20	0.13	-0.12	-16.88	203.03
	NORMAL	9,358.0	0.18	201.02	8,734.50	2,103.68	2,029.54	2,923.09	0.34	0.00	-131.39	207.59
	NORMAL	9,453.0	0.63	178.31	8,829.50	2,103.01	2,029.50	2,922.59	0.49	0.47	-23.91	328.77
	NORMAL	9,548.0	0.74	204.39	8,924.50	2,101.93	2,029.27	2,921.65	0.34	0.12	27.45	83.92
	NORMAL	9,643.0	1.11	175.68	9,019.48	2,100.46	2,029.08	2,920.46	0.61	0.39	-30.22	293.66
	NORMAL	9,738.0	1.32	193.37	9,114.46	2,098.47	2,028.90	2,918.90	0.45	0.22	18.62	69.80
	NORMAL	9,832.0	1.51	189.00	9,208.43	2,096.20	2,028.45	2,916.95	0.23	0.20	-4.65	328.21
	NORMAL	9,927.0	1.85	197.78	9,303.39	2,093.50	2,027.79	2,914.55	0.45	0.36	9.24	41.57
	NORMAL	10,022.0	1.85	213.69	9,398.34	2,090.77	2,026.47	2,911.66	0.54	0.00	16.75	97.95
6/27/2014	NORMAL	10,118.0	2.02	221.86	9,494.29	2,088.22	2,024.48	2,908.45	0.34	0.18	8.51	62.48
	NORMAL	10,212.0	2.32	211.45	9,588.22	2,085.36	2,022.38	2,904.93	0.53	0.32	-11.07	302.00
	NORMAL	10,308.0	2.56	210.54	9,684.14	2,081.86	2,020.28	2,900.95	0.25	0.25	-0.95	350.38
	NORMAL	10,403.0	2.99	210.17	9,779.02	2,077.89	2,017.96	2,896.48	0.45	0.45	-0.39	357.43
	NORMAL	10,498.0	3.17	210.70	9,873.89	2,073.49	2,015.37	2,891.52	0.19	0.19	0.56	9.25
	NORMAL	10,593.0	3.23	214.40	9,968.74	2,069.02	2,012.52	2,886.32	0.23	0.06	3.89	75.65
	NORMAL	10,688.0	3.27	214.58	10,063.59	2,064.58	2,009.47	2,881.01	0.04	0.04	0.19	14.40
	NORMAL	10,746.0	3.27	214.58	10,121.49	2,061.86	2,007.59	2,877.74	0.00	0.00	0.00	0.00