

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 411-17	Wellbore No.	
Well Name	KP 411-17	Common Name	KP 411-17
Project	KP 08-06S-91W	Site	KP 24-8 Pad
Vertical Section Azimuth	238.38 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	3/18/2012	UWI	KP 411-17
Active Datum	KB @6,552.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	3/18/2012	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 (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/18/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/18/2012	NORMAL	106.0	0.62	252.25	106.00	-0.17	-0.55	0.56	0.58	0.58	0.00	252.25
	NORMAL	136.0	1.32	232.38	135.99	-0.44	-0.97	1.06	2.55	2.33	-66.23	324.17
	NORMAL	167.0	1.41	238.01	166.98	-0.86	-1.58	1.79	0.52	0.29	18.16	58.97
	NORMAL	197.0	1.58	234.76	196.97	-1.29	-2.23	2.58	0.63	0.57	-10.83	331.86
	NORMAL	228.0	2.64	243.11	227.95	-1.86	-3.22	3.71	3.55	3.42	26.94	20.37
	NORMAL	258.0	2.90	247.24	257.92	-2.47	-4.53	5.15	1.09	0.87	13.77	39.59
	NORMAL	288.0	4.13	240.82	287.86	-3.29	-6.18	6.98	4.30	4.10	-21.40	339.03
	NORMAL	318.0	4.98	238.74	317.77	-4.49	-8.23	9.36	2.89	2.83	-6.93	347.96
	NORMAL	349.0	6.33	233.53	348.61	-6.20	-10.76	12.41	4.65	4.35	-16.81	336.57
	NORMAL	379.0	8.27	238.18	378.37	-8.32	-13.92	16.22	6.75	6.47	15.50	19.25
	NORMAL	410.0	10.03	234.84	408.98	-11.05	-18.02	21.14	5.93	5.68	-10.77	341.55
	NORMAL	440.0	11.26	234.93	438.46	-14.24	-22.56	26.67	4.10	4.10	0.30	0.82
	NORMAL	470.0	13.37	237.30	467.77	-17.80	-27.87	33.07	7.23	7.03	7.90	14.63
	NORMAL	501.0	14.08	238.54	497.88	-21.70	-34.11	40.42	2.48	2.29	4.00	23.11
	NORMAL	532.0	14.52	239.50	527.92	-25.64	-40.67	48.08	1.61	1.42	3.10	28.79
	NORMAL	602.0	16.97	238.50	595.29	-35.44	-56.94	67.07	3.52	3.50	-1.43	353.20
	NORMAL	693.0	19.64	238.32	681.68	-50.41	-81.29	95.65	2.93	2.93	-0.20	358.70
3/19/2012	NORMAL	784.0	22.88	239.06	766.47	-67.54	-109.48	128.64	3.57	3.56	0.81	5.08
	NORMAL	875.0	25.67	237.00	849.42	-87.37	-141.19	166.04	3.20	3.07	-2.26	342.17
	NORMAL	965.0	28.58	236.39	929.51	-109.91	-175.48	207.05	3.25	3.23	-0.68	354.27

2.1.2 Survey Stations (Continued)

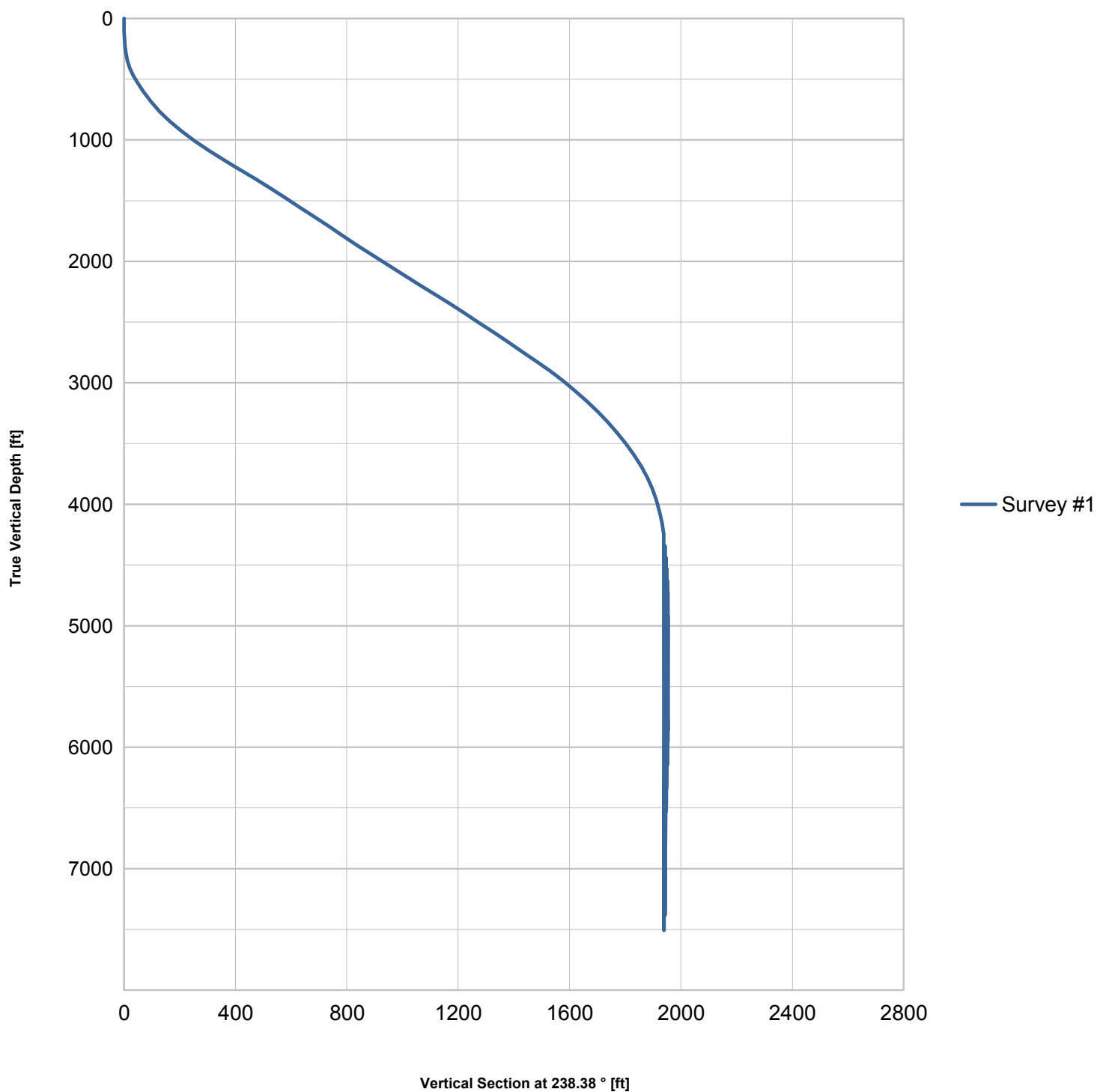
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/19/2012	NORMAL	1,060.0	32.12	238.28	1,011.48	-135.78	-215.90	255.03	3.86	3.73	1.99	15.92
	NORMAL	1,156.0	34.12	240.16	1,091.88	-162.60	-260.97	307.47	2.34	2.08	1.96	27.98
	NORMAL	1,252.0	35.44	239.20	1,170.73	-190.25	-308.23	362.22	1.49	1.38	-1.00	337.07
	NORMAL	1,310.0	36.09	239.12	1,217.79	-207.62	-337.34	396.11	1.12	1.12	-0.14	355.85
3/20/2012	NORMAL	1,370.0	36.84	241.05	1,266.05	-225.40	-368.24	431.75	2.28	1.25	3.22	57.60
	NORMAL	1,434.0	36.58	238.41	1,317.36	-244.68	-401.28	469.99	2.50	-0.41	-4.13	259.59
	NORMAL	1,530.0	33.68	238.59	1,395.86	-273.54	-448.37	525.22	3.02	-3.02	0.19	178.03
	NORMAL	1,626.0	33.59	237.53	1,475.79	-301.67	-493.50	578.40	0.62	-0.09	-1.10	260.84
	NORMAL	1,722.0	33.94	238.23	1,555.60	-330.04	-538.69	631.75	0.55	0.36	0.73	48.32
	NORMAL	1,817.0	33.68	238.76	1,634.53	-357.66	-583.76	684.61	0.41	-0.27	0.56	131.62
	NORMAL	1,912.0	33.15	238.76	1,713.83	-384.80	-628.49	736.93	0.56	-0.56	0.00	180.00
	NORMAL	2,007.0	32.01	238.23	1,793.88	-411.53	-672.10	788.08	1.24	-1.20	-0.56	193.83
	NORMAL	2,102.0	34.73	237.00	1,873.21	-439.53	-716.21	840.32	2.95	2.86	-1.29	345.52
	NORMAL	2,197.0	34.65	236.65	1,951.32	-469.11	-761.47	894.37	0.23	-0.08	-0.37	247.98
	NORMAL	2,293.0	33.94	236.65	2,030.63	-498.85	-806.65	948.44	0.74	-0.74	0.00	180.00
	NORMAL	2,388.0	34.73	237.88	2,109.08	-527.82	-851.72	1,002.01	1.11	0.83	1.29	41.80
	NORMAL	2,579.0	35.44	237.53	2,265.03	-586.30	-945.20	1,112.27	0.42	0.00	-0.73	269.71
	NORMAL	2,674.0	34.38	239.99	2,342.94	-614.51	-991.67	1,166.63	1.85	-1.12	2.59	127.98
	NORMAL	2,769.0	33.41	239.64	2,421.80	-641.14	-1,037.47	1,219.59	1.04	-1.02	-0.37	191.23
	NORMAL	2,864.0	33.59	239.29	2,501.01	-667.78	-1,082.63	1,272.01	0.28	0.19	-0.37	312.83
	NORMAL	2,959.0	34.03	239.29	2,579.95	-694.78	-1,128.08	1,324.87	0.46	0.46	0.00	0.00
	NORMAL	3,055.0	32.10	238.06	2,660.40	-722.00	-1,172.82	1,377.24	2.13	-2.01	-1.28	198.66
3/20/2012	NORMAL	2,483.0	35.44	238.23	2,186.82	-556.71	-898.06	1,056.61	0.78	0.75	0.37	15.96
3/21/2012	NORMAL	3,150.0	32.45	237.53	2,740.72	-749.03	-1,215.75	1,427.97	0.47	0.37	-0.56	320.82
	NORMAL	3,245.0	32.71	237.00	2,820.77	-776.69	-1,258.78	1,479.11	0.41	0.27	-0.56	312.11
	NORMAL	3,340.0	31.04	237.71	2,901.44	-803.76	-1,301.01	1,529.27	1.80	-1.76	0.75	167.65
	NORMAL	3,435.0	28.84	239.64	2,983.76	-828.43	-1,341.49	1,576.67	2.53	-2.32	2.03	157.19
	NORMAL	3,530.0	26.64	239.29	3,067.84	-850.89	-1,379.58	1,620.88	2.32	-2.32	-0.37	184.08
	NORMAL	3,625.0	25.68	233.31	3,153.12	-874.07	-1,414.40	1,662.69	2.95	-1.01	-6.29	247.32
	NORMAL	3,720.0	23.57	239.64	3,239.49	-895.97	-1,447.31	1,702.19	3.55	-2.22	6.66	131.51
	NORMAL	3,814.0	21.46	238.76	3,326.32	-914.39	-1,478.23	1,738.18	2.27	-2.24	-0.94	188.67
	NORMAL	3,909.0	20.22	237.36	3,415.11	-932.26	-1,506.91	1,771.97	1.41	-1.31	-1.47	201.23
	NORMAL	4,004.0	18.55	236.83	3,504.72	-949.39	-1,533.39	1,803.49	1.77	-1.76	-0.56	185.76
	NORMAL	4,098.0	16.62	233.84	3,594.32	-965.50	-1,556.76	1,831.85	2.27	-2.05	-3.18	203.66
	NORMAL	4,194.0	14.68	236.65	3,686.76	-980.29	-1,578.01	1,857.69	2.17	-2.02	2.93	160.01
	NORMAL	4,287.0	12.05	237.00	3,777.23	-992.06	-1,596.00	1,879.18	2.83	-2.83	0.38	178.41
	NORMAL	4,381.0	10.02	235.95	3,869.49	-1,001.98	-1,611.00	1,897.16	2.17	-2.16	-1.12	185.14
	NORMAL	4,477.0	7.47	234.47	3,964.37	-1,010.28	-1,623.00	1,911.73	2.67	-2.66	-1.54	184.31
	NORMAL	4,573.0	6.33	239.64	4,059.67	-1,016.59	-1,632.65	1,923.25	1.35	-1.19	5.39	153.97
	NORMAL	4,667.0	4.75	245.62	4,153.23	-1,020.81	-1,640.67	1,932.29	1.79	-1.68	6.36	162.89
	NORMAL	4,762.0	2.64	241.75	4,248.03	-1,023.47	-1,646.18	1,938.38	2.24	-2.22	-4.07	184.81
	NORMAL	4,857.0	2.37	242.45	4,342.94	-1,025.42	-1,649.84	1,942.52	0.29	-0.28	0.74	173.88
	NORMAL	4,953.0	2.20	242.98	4,438.86	-1,027.17	-1,653.25	1,946.34	0.18	-0.18	0.55	173.18
	NORMAL	5,048.0	1.58	239.64	4,533.81	-1,028.66	-1,656.00	1,949.47	0.66	-0.65	-3.52	188.41
3/22/2012	NORMAL	5,144.0	1.23	241.40	4,629.78	-1,029.82	-1,658.05	1,951.82	0.37	-0.36	1.83	173.85
	NORMAL	5,239.0	0.79	312.24	4,724.77	-1,029.87	-1,659.43	1,953.02	1.29	-0.46	74.57	142.45
	NORMAL	5,335.0	0.97	336.85	4,820.76	-1,028.68	-1,660.24	1,953.08	0.43	0.19	25.64	77.18
	NORMAL	5,430.0	0.70	353.90	4,915.75	-1,027.36	-1,660.61	1,952.72	0.38	-0.28	17.95	145.69
	NORMAL	5,525.0	0.88	10.25	5,010.74	-1,026.07	-1,660.55	1,951.98	0.30	0.19	17.21	59.76
	NORMAL	5,620.0	1.23	8.49	5,105.72	-1,024.34	-1,660.27	1,950.83	0.37	0.37	-1.85	353.83
	NORMAL	5,712.0	1.41	102.88	5,197.71	-1,023.62	-1,659.02	1,949.39	2.11	0.20	102.60	133.57
	NORMAL	5,811.0	0.62	97.61	5,296.69	-1,023.96	-1,657.30	1,948.11	0.80	-0.80	-5.32	184.11
	NORMAL	5,906.0	1.06	186.73	5,391.68	-1,024.90	-1,656.89	1,948.25	1.28	0.46	93.81	119.66
	NORMAL	6,001.0	1.23	190.60	5,486.66	-1,026.78	-1,657.18	1,949.48	0.20	0.18	4.07	26.40
	NORMAL	6,096.0	1.32	200.79	5,581.64	-1,028.80	-1,657.76	1,951.04	0.26	0.09	10.73	73.50
	NORMAL	6,191.0	1.06	191.83	5,676.62	-1,030.68	-1,658.33	1,952.51	0.34	-0.27	-9.43	211.17
3/23/2012	NORMAL	6,284.0	0.35	161.95	5,769.61	-1,031.80	-1,658.41	1,953.17	0.83	-0.76	-32.13	192.98

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/23/2012	NORMAL	6,377.0	0.18	111.32	5,862.61	-1,032.12	-1,658.19	1,953.15	0.29	-0.18	-54.44	210.54
	NORMAL	6,472.0	0.35	356.18	5,957.61	-1,031.88	-1,658.07	1,952.92	0.48	0.18	-121.20	223.95
	NORMAL	6,567.0	0.62	33.62	6,052.61	-1,031.17	-1,657.81	1,952.32	0.42	0.28	39.41	69.32
	NORMAL	6,662.0	0.97	35.21	6,147.60	-1,030.08	-1,657.06	1,951.11	0.37	0.37	1.67	4.40
3/24/2012	NORMAL	6,757.0	1.23	27.30	6,242.58	-1,028.52	-1,656.13	1,949.50	0.32	0.27	-8.33	325.72
	NORMAL	6,853.0	0.53	60.52	6,338.57	-1,027.38	-1,655.27	1,948.17	0.87	-0.73	34.60	159.74
	NORMAL	6,948.0	0.97	144.37	6,433.56	-1,027.82	-1,654.42	1,947.68	1.11	0.46	88.26	113.83
	NORMAL	7,043.0	1.06	91.81	6,528.55	-1,028.50	-1,653.07	1,946.89	0.95	0.09	-55.33	248.85
	NORMAL	7,138.0	1.58	101.38	6,623.52	-1,028.79	-1,650.91	1,945.20	0.59	0.55	10.07	27.81
	NORMAL	7,232.0	0.97	104.29	6,717.50	-1,029.24	-1,648.87	1,943.70	0.65	-0.65	3.10	175.39
	NORMAL	7,328.0	0.44	254.11	6,813.50	-1,029.54	-1,648.43	1,943.48	1.43	-0.55	156.06	170.70
	NORMAL	7,423.0	0.18	349.50	6,908.50	-1,029.50	-1,648.81	1,943.78	0.52	-0.27	100.41	158.58
	NORMAL	7,518.0	0.88	322.61	7,003.49	-1,028.77	-1,649.28	1,943.80	0.76	0.74	-28.31	326.65
	NORMAL	7,613.0	0.97	1.98	7,098.48	-1,027.39	-1,649.70	1,943.43	0.66	0.09	41.44	101.94
	NORMAL	7,708.0	0.97	308.20	7,193.47	-1,026.09	-1,650.30	1,943.26	0.92	0.00	-56.61	243.11
	NORMAL	7,804.0	1.14	314.00	7,289.45	-1,024.92	-1,651.63	1,943.78	0.21	0.18	6.04	35.06
3/25/2012	NORMAL	7,899.0	2.20	10.60	7,384.42	-1,022.47	-1,651.97	1,942.79	1.93	1.12	59.58	87.77
	NORMAL	8,023.0	2.20	10.60	7,508.32	-1,017.79	-1,651.09	1,939.59	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

