

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 434-9	Wellbore No.	
Well Name	KP 434-9	Common Name	KP 434-9
Project	KP 16-06S-091W	Site	KP 11-16 Pad
Vertical Section Azimuth	64.62 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	10/19/2012	UWI	KP 434-9
Active Datum	KB @6,658.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	10/19/2012	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 (°)
10/19/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/19/2012	NORMAL	106.0	1.50	40.78	105.99	1.05	0.91	1.27	1.42	1.42	0.00	40.78
	NORMAL	136.0	2.20	42.19	135.97	1.77	1.55	2.16	2.34	2.33	4.70	4.43
	NORMAL	167.0	3.17	57.13	166.94	2.68	2.67	3.56	3.83	3.13	48.19	43.43
	NORMAL	198.0	4.13	56.87	197.87	3.76	4.32	5.52	3.10	3.10	-0.84	358.88
	NORMAL	228.0	5.37	64.95	227.77	4.94	6.50	7.99	4.69	4.13	26.93	32.42
	NORMAL	258.0	6.33	58.18	257.62	6.41	9.18	11.04	3.94	3.20	-22.57	320.89
	NORMAL	289.0	7.92	53.35	288.38	8.58	12.34	14.83	5.48	5.13	-15.58	336.95
	NORMAL	319.0	9.41	63.02	318.03	10.93	16.19	19.31	6.93	4.97	32.23	49.20
	NORMAL	350.0	10.65	64.78	348.56	13.30	21.04	24.71	4.12	4.00	5.68	14.75
10/20/2012	NORMAL	380.0	11.96	66.71	377.98	15.71	26.40	30.59	4.54	4.37	6.43	17.06
	NORMAL	410.0	13.46	64.78	407.24	18.43	32.42	37.18	5.20	5.00	-6.43	343.25
	NORMAL	441.0	13.99	66.88	437.36	21.44	39.13	44.54	2.35	1.71	6.77	44.25
	NORMAL	481.0	14.77	71.86	476.10	24.92	48.42	54.43	3.65	1.95	12.45	60.19
	NORMAL	512.0	15.65	69.58	506.02	27.61	56.09	62.51	3.43	2.84	-7.35	324.69
	NORMAL	542.0	16.80	71.07	534.82	30.43	63.99	70.85	4.08	3.83	4.97	20.62
	NORMAL	573.0	18.11	70.02	564.39	33.53	72.75	80.10	4.35	4.23	-3.39	345.98
	NORMAL	603.0	19.61	69.32	592.78	36.90	81.84	89.76	5.06	5.00	-2.33	351.09
	NORMAL	634.0	20.75	67.65	621.88	40.83	91.79	100.43	4.12	3.68	-5.39	332.40
	NORMAL	663.0	21.90	66.77	648.89	44.91	101.51	110.96	4.12	3.97	-3.03	344.04
	NORMAL	694.0	22.86	65.80	677.56	49.66	112.32	122.76	3.32	3.10	-3.13	338.51

2.1.2 Survey Stations (Continued)

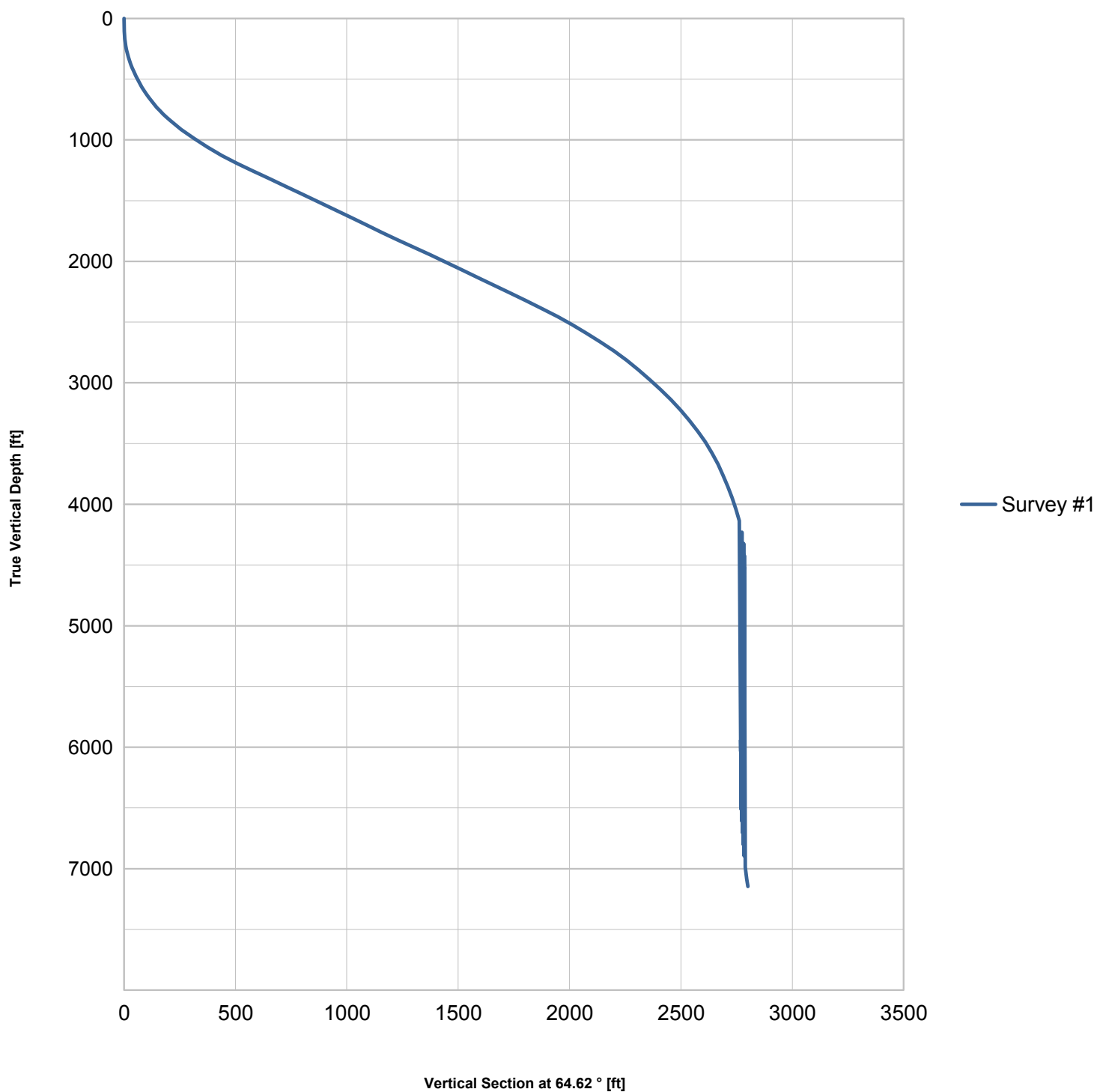
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
10/20/2012	NORMAL	724.0	24.45	65.62	705.04	54.61	123.29	134.80	5.31	5.30	-0.60	357.32
	NORMAL	755.0	25.59	65.19	733.13	60.07	135.21	147.91	3.72	3.68	-1.39	350.74
	NORMAL	785.0	26.73	64.92	760.05	65.65	147.20	161.13	3.82	3.80	-0.90	353.92
	NORMAL	815.0	28.67	63.87	786.62	71.68	159.77	175.08	6.67	6.47	-3.50	345.41
	NORMAL	845.0	30.43	64.57	812.71	78.11	173.10	189.87	5.98	5.87	2.33	11.40
	NORMAL	876.0	31.83	64.75	839.25	84.97	187.58	205.90	4.53	4.52	0.58	3.88
	NORMAL	967.0	36.14	63.78	914.69	107.07	233.38	256.75	4.77	4.74	-1.07	352.43
	NORMAL	1,058.0	39.57	64.22	986.53	131.54	283.57	312.58	3.78	3.77	0.48	4.68
	NORMAL	1,153.0	41.24	64.04	1,058.86	158.41	338.97	374.15	1.76	1.76	-0.19	355.93
	NORMAL	1,249.0	44.76	64.66	1,129.06	186.74	397.99	439.61	3.69	3.67	0.65	7.08
	NORMAL	1,344.0	47.57	64.66	1,194.85	216.06	459.91	508.13	2.96	2.96	0.00	0.00
	NORMAL	1,439.0	50.12	63.87	1,257.37	247.13	524.34	579.65	2.76	2.68	-0.83	346.61
	NORMAL	1,475.0	50.83	64.13	1,280.28	259.30	549.30	607.42	2.05	1.97	0.72	15.86
10/21/2012	NORMAL	1,539.0	48.54	64.31	1,321.68	280.52	593.23	656.22	3.58	-3.58	0.28	176.63
	NORMAL	1,634.0	49.07	63.96	1,384.25	311.71	657.56	727.70	0.62	0.56	-0.37	333.46
	NORMAL	1,729.0	48.89	63.60	1,446.60	343.38	721.86	799.37	0.34	-0.19	-0.38	236.35
	NORMAL	1,824.0	49.33	63.78	1,508.79	375.21	786.24	871.17	0.48	0.46	0.19	17.24
	NORMAL	1,919.0	48.54	64.48	1,571.20	406.46	850.68	942.80	1.00	-0.83	0.74	146.48
	NORMAL	2,015.0	48.28	63.96	1,634.92	437.69	915.34	1,014.59	0.49	-0.27	-0.54	236.06
10/22/2012	NORMAL	2,110.0	48.10	64.31	1,698.25	468.58	979.05	1,085.40	0.33	-0.19	0.37	124.72
	NORMAL	2,206.0	48.45	65.89	1,762.15	498.74	1,044.04	1,157.04	1.28	0.36	1.65	74.00
	NORMAL	2,302.0	50.39	65.36	1,824.60	528.84	1,110.44	1,229.94	2.06	2.02	-0.55	348.10
	NORMAL	2,397.0	49.95	64.31	1,885.45	559.86	1,176.47	1,302.89	0.97	-0.46	-1.11	241.04
	NORMAL	2,493.0	49.24	66.24	1,947.67	590.43	1,242.87	1,375.98	1.70	-0.74	2.01	116.41
	NORMAL	2,588.0	49.07	65.71	2,009.81	619.69	1,308.51	1,447.83	0.46	-0.18	-0.56	246.85
	NORMAL	2,684.0	48.80	65.19	2,072.87	649.76	1,374.34	1,520.20	0.50	-0.28	-0.54	235.28
	NORMAL	2,779.0	48.54	64.83	2,135.61	679.90	1,439.00	1,591.54	0.39	-0.27	-0.38	226.00
	NORMAL	2,875.0	48.54	65.01	2,199.17	710.40	1,504.16	1,663.48	0.14	0.00	0.19	90.06
	NORMAL	2,970.0	48.54	64.66	2,262.07	740.67	1,568.60	1,734.67	0.28	0.00	-0.37	269.88
	NORMAL	3,065.0	48.89	64.48	2,324.75	771.33	1,633.07	1,806.06	0.39	0.37	-0.19	338.81
	NORMAL	3,160.0	46.52	63.96	2,388.68	801.88	1,696.34	1,876.32	2.53	-2.49	-0.55	189.04
	NORMAL	3,256.0	46.34	63.60	2,454.84	832.61	1,758.74	1,945.87	0.33	-0.19	-0.38	235.27
	NORMAL	3,350.0	43.35	64.83	2,521.48	861.46	1,818.41	2,012.15	3.31	-3.18	1.31	164.26
	NORMAL	3,445.0	41.24	63.43	2,591.75	889.33	1,875.94	2,076.07	2.43	-2.22	-1.47	203.55
	NORMAL	3,541.0	40.80	65.36	2,664.18	916.57	1,932.75	2,139.07	1.40	-0.46	2.01	109.88
	NORMAL	3,637.0	37.72	66.24	2,738.51	941.48	1,988.15	2,199.80	3.26	-3.21	0.92	170.09
	NORMAL	3,732.0	35.17	62.37	2,814.93	965.88	2,039.00	2,256.20	3.61	-2.68	-4.07	220.49
	NORMAL	3,827.0	32.45	65.71	2,893.87	989.06	2,086.48	2,309.04	3.47	-2.86	3.52	147.03
	NORMAL	3,922.0	32.36	60.26	2,974.09	1,012.16	2,131.80	2,359.88	3.08	-0.09	-5.74	265.94
	NORMAL	4,017.0	29.98	60.44	3,055.37	1,036.49	2,174.53	2,408.91	2.51	-2.51	0.19	177.84
	NORMAL	4,112.0	28.14	61.32	3,138.41	1,058.95	2,214.83	2,454.95	1.99	-1.94	0.93	167.31
	NORMAL	4,208.0	25.06	61.67	3,224.24	1,079.47	2,252.60	2,497.87	3.21	-3.21	0.36	177.24
10/23/2012	NORMAL	4,303.0	24.53	65.71	3,310.48	1,097.13	2,288.28	2,537.68	1.87	-0.56	4.25	109.20
	NORMAL	4,399.0	22.34	67.65	3,398.56	1,112.27	2,323.33	2,575.83	2.42	-2.28	2.02	161.48
	NORMAL	4,494.0	19.52	68.88	3,487.28	1,124.86	2,354.84	2,609.70	3.00	-2.97	1.29	171.72
	NORMAL	4,590.0	17.59	68.88	3,578.29	1,135.86	2,383.33	2,640.16	2.01	-2.01	0.00	180.00
	NORMAL	4,685.0	14.42	69.23	3,669.60	1,145.23	2,407.79	2,666.27	3.34	-3.34	0.37	178.42
	NORMAL	4,780.0	13.45	67.30	3,761.80	1,153.69	2,429.04	2,689.10	1.13	-1.02	-2.03	204.67
	NORMAL	4,875.0	12.49	73.92	3,854.38	1,160.80	2,449.11	2,710.27	1.86	-1.01	6.97	126.06
	NORMAL	4,970.0	11.52	73.97	3,947.30	1,166.26	2,468.10	2,729.77	1.02	-1.02	0.05	179.41
	NORMAL	5,066.0	9.67	70.46	4,041.66	1,171.61	2,484.91	2,747.25	2.04	-1.93	-3.66	197.51
	NORMAL	5,161.0	8.27	71.51	4,135.50	1,176.44	2,498.91	2,761.97	1.48	-1.47	1.11	173.85
	NORMAL	5,256.0	6.07	72.57	4,229.75	1,180.12	2,510.18	2,773.73	2.32	-2.32	1.12	177.08
	NORMAL	5,351.0	3.52	76.96	4,324.41	1,182.28	2,517.82	2,781.56	2.71	-2.68	4.62	173.99
	NORMAL	5,447.0	0.09	232.35	4,420.35	1,182.90	2,520.63	2,784.36	3.75	-3.57	161.86	179.40
10/24/2012	NORMAL	5,541.0	1.41	300.20	4,514.34	1,183.44	2,519.57	2,783.64	1.47	1.40	72.18	71.32
	NORMAL	5,637.0	1.23	312.86	4,610.31	1,184.73	2,517.79	2,782.59	0.36	-0.19	13.19	127.91

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 (°)
10/24/2012	NORMAL	5,731.0	0.26	260.30	4,704.31	1,185.38	2,516.84	2,782.01	1.16	-1.03	-55.91	190.90
	NORMAL	5,826.0	0.35	303.30	4,799.30	1,185.50	2,516.39	2,781.65	0.25	0.09	45.26	90.97
	NORMAL	5,921.0	0.53	199.13	4,894.30	1,185.25	2,516.00	2,781.19	0.74	0.19	-109.65	226.97
	NORMAL	6,016.0	1.41	193.33	4,989.29	1,183.70	2,515.59	2,780.15	0.93	0.93	-6.11	350.73
	NORMAL	6,112.0	0.70	180.85	5,085.27	1,181.96	2,515.31	2,779.16	0.77	-0.74	-13.00	191.76
	NORMAL	6,206.0	0.35	181.73	5,179.27	1,181.10	2,515.29	2,778.77	0.37	-0.37	0.94	179.12
	NORMAL	6,302.0	1.41	240.26	5,275.26	1,180.22	2,514.26	2,777.46	1.32	1.10	60.97	72.20
10/25/2012	NORMAL	6,396.0	1.23	265.40	5,369.23	1,179.57	2,512.25	2,775.36	0.64	-0.19	26.74	119.57
	NORMAL	6,491.0	1.05	289.31	5,464.21	1,179.77	2,510.41	2,773.79	0.53	-0.19	25.17	122.40
	NORMAL	6,587.0	1.32	332.90	5,560.19	1,181.05	2,509.08	2,773.13	0.95	0.28	45.41	95.89
	NORMAL	6,682.0	1.41	287.20	5,655.17	1,182.37	2,507.46	2,772.24	1.12	0.09	-48.11	251.63
	NORMAL	6,778.0	0.79	224.97	5,751.15	1,182.25	2,505.86	2,770.75	1.31	-0.65	-64.82	213.86
10/26/2012	NORMAL	6,873.0	0.53	270.15	5,846.15	1,181.78	2,504.96	2,769.73	0.59	-0.27	47.56	137.92
	NORMAL	6,968.0	0.35	214.78	5,941.15	1,181.55	2,504.36	2,769.08	0.46	-0.19	-58.28	221.02
	NORMAL	7,063.0	0.09	77.31	6,036.15	1,181.33	2,504.26	2,768.91	0.44	-0.27	-144.71	188.31
10/27/2012	NORMAL	7,159.0	0.88	50.77	6,132.14	1,181.81	2,504.91	2,769.69	0.83	0.82	-27.65	330.58
	NORMAL	7,254.0	0.26	116.86	6,227.14	1,182.17	2,505.67	2,770.53	0.85	-0.65	69.57	162.94
	NORMAL	7,350.0	0.44	272.61	6,323.14	1,182.09	2,505.49	2,770.34	0.71	0.19	162.24	164.71
	NORMAL	7,444.0	0.62	1.90	6,417.13	1,182.62	2,505.15	2,770.26	0.80	0.19	94.99	124.89
10/28/2012	NORMAL	7,539.0	1.23	16.84	6,512.12	1,184.11	2,505.46	2,771.18	0.69	0.64	15.73	29.15
10/29/2012	NORMAL	7,635.0	1.76	28.04	6,608.09	1,186.39	2,506.45	2,773.05	0.63	0.55	11.67	34.54
	NORMAL	7,731.0	2.37	31.96	6,704.03	1,189.38	2,508.20	2,775.91	0.65	0.64	4.08	15.00
	NORMAL	7,826.0	2.99	30.03	6,798.92	1,193.19	2,510.48	2,779.60	0.66	0.65	-2.03	350.75
	NORMAL	7,922.0	3.61	23.70	6,894.76	1,198.12	2,512.94	2,783.95	0.75	0.65	-6.59	326.37
	NORMAL	8,017.0	4.49	27.92	6,989.52	1,204.15	2,515.89	2,789.19	0.98	0.93	4.44	20.82
	NORMAL	8,113.0	5.54	26.16	7,085.16	1,211.63	2,519.69	2,795.83	1.11	1.09	-1.83	350.79
10/30/2012	NORMAL	8,175.0	5.54	26.16	7,146.87	1,217.00	2,522.33	2,800.52	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

