

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 24-9	Wellbore No.	
Well Name	KP 24-9	Common Name	KP 24-9
Project	KP 16-06S-091W	Site	KP 11-16 Pad
Vertical Section Azimuth	36.06 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	9/14/2012	UWI	KP 24-9
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	9/14/2012	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 (°)
9/14/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/14/2012	NORMAL	75.0	0.97	6.94	75.00	0.63	0.08	0.55	1.29	1.29	0.00	6.94
	NORMAL	106.0	2.38	17.67	105.98	1.50	0.30	1.39	4.64	4.55	34.61	17.94
	NORMAL	136.0	2.29	16.88	135.96	2.67	0.67	2.55	0.32	-0.30	-2.63	199.28
	NORMAL	166.0	3.28	23.86	165.92	4.03	1.19	3.96	3.48	3.30	23.27	22.42
	NORMAL	198.0	3.34	32.34	197.87	5.65	2.06	5.78	1.54	0.19	26.50	87.26
	NORMAL	228.0	4.05	37.77	227.81	7.23	3.17	7.71	2.64	2.37	18.10	28.96
	NORMAL	259.0	5.01	38.85	258.71	9.15	4.69	10.16	3.11	3.10	3.48	5.62
	NORMAL	289.0	6.07	42.54	288.57	11.34	6.59	13.04	3.73	3.53	12.30	20.42
	NORMAL	319.0	7.50	43.77	318.36	13.92	9.01	16.56	4.79	4.77	4.10	6.41
	NORMAL	349.0	8.01	42.89	348.08	16.87	11.79	20.58	1.75	1.70	-2.93	346.46
	NORMAL	379.0	8.89	45.62	377.76	20.02	14.87	24.94	3.22	2.93	9.10	25.86
	NORMAL	409.0	9.77	44.30	407.36	23.46	18.31	29.74	3.02	2.93	-4.40	345.68
	NORMAL	440.0	10.73	42.28	437.87	27.48	22.08	35.21	3.31	3.10	-6.52	338.48
	NORMAL	470.0	11.88	41.66	467.28	31.85	26.02	41.06	3.85	3.83	-2.07	353.66
	NORMAL	512.0	13.92	41.66	508.22	38.86	32.25	50.40	4.86	4.86	0.00	0.00
	NORMAL	542.0	15.79	40.74	537.22	44.65	37.31	58.06	6.28	6.23	-3.07	352.37
	NORMAL	572.0	17.59	41.38	565.95	51.14	42.97	66.64	6.03	6.00	2.13	6.14
	NORMAL	603.0	18.99	40.23	595.38	58.51	49.33	76.33	4.66	4.52	-3.71	345.00
	NORMAL	633.0	20.84	38.04	623.59	66.44	55.77	86.53	6.65	6.17	-7.30	337.01
	NORMAL	663.0	22.42	36.89	651.48	75.22	62.49	97.59	5.45	5.27	-3.83	344.45

2.1.2 Survey Stations (Continued)

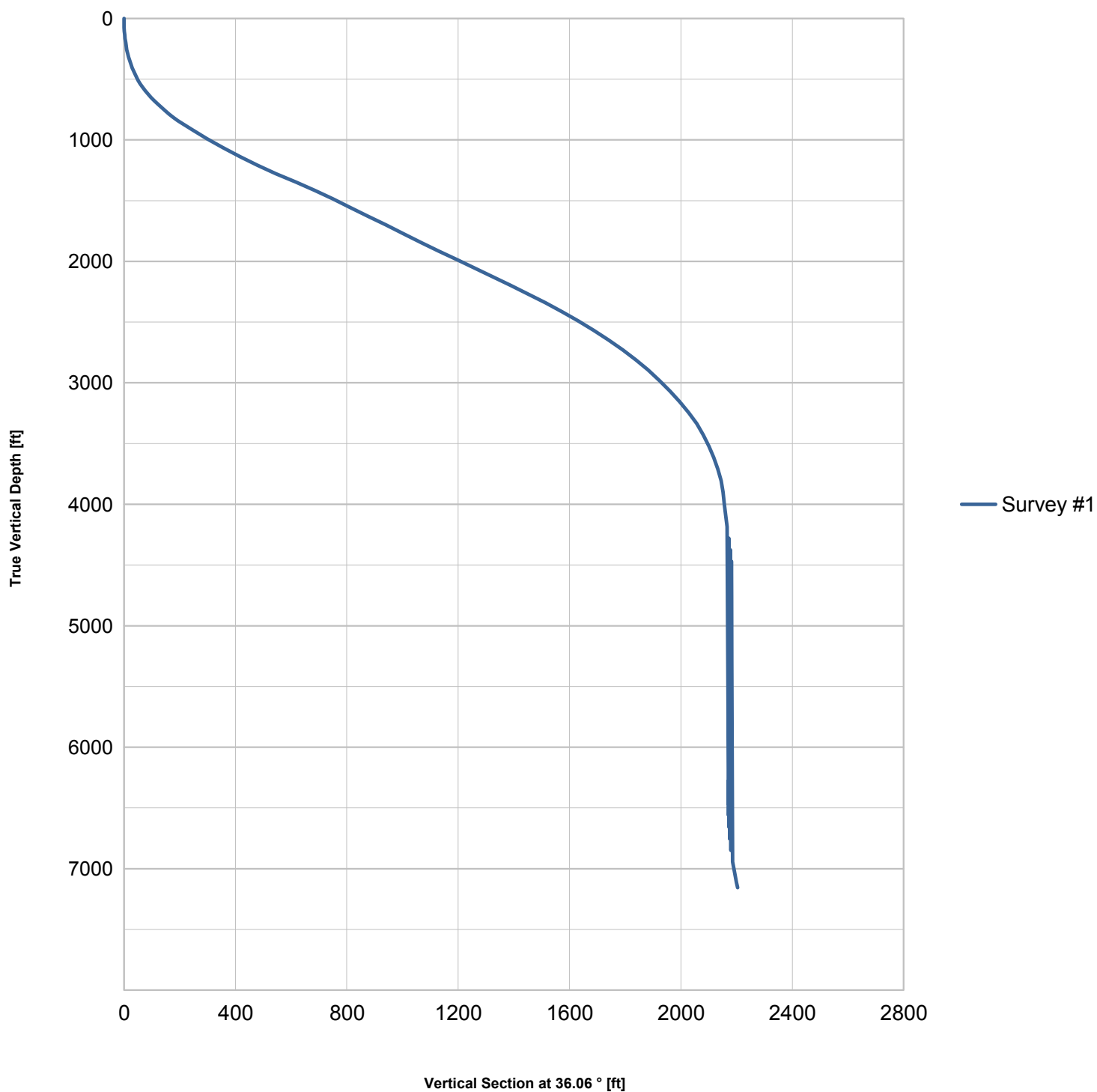
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
9/14/2012	NORMAL	693.0	23.48	35.84	679.10	84.64	69.42	109.29	3.79	3.53	-3.50	338.40
	NORMAL	724.0	24.89	34.08	707.38	95.05	76.70	121.98	5.11	4.55	-5.68	332.11
	NORMAL	785.0	27.08	35.05	762.21	117.05	91.86	148.70	3.66	3.59	1.59	11.42
	NORMAL	815.0	28.75	34.96	788.72	128.55	99.92	162.74	5.57	5.57	-0.30	358.51
	NORMAL	846.0	29.81	35.22	815.76	140.96	108.64	177.90	3.44	3.42	0.84	6.95
	NORMAL	876.0	31.92	35.75	841.51	153.49	117.57	193.29	7.09	7.03	1.77	7.57
	NORMAL	906.0	34.03	35.58	866.67	166.75	127.09	209.61	7.04	7.03	-0.57	357.42
	NORMAL	966.0	35.61	35.49	915.93	194.63	147.00	243.87	2.63	2.63	-0.15	358.10
9/16/2012	NORMAL	1,057.0	36.58	34.17	989.46	238.64	177.61	297.47	1.37	1.07	-1.45	320.75
	NORMAL	1,152.0	38.78	33.91	1,064.64	286.76	210.11	355.49	2.32	2.32	-0.27	355.77
	NORMAL	1,248.0	41.24	36.63	1,138.17	337.11	245.77	417.19	3.14	2.56	2.83	36.46
	NORMAL	1,343.0	41.86	35.75	1,209.27	387.97	282.98	480.20	0.90	0.65	-0.93	316.40
	NORMAL	1,438.0	45.02	34.87	1,278.24	441.27	320.71	545.51	3.39	3.33	-0.93	348.84
	NORMAL	1,539.0	46.78	34.78	1,348.52	500.81	362.13	618.02	1.74	1.74	-0.09	357.87
	NORMAL	1,634.0	43.70	34.08	1,415.41	556.44	400.28	685.44	3.28	-3.24	-0.74	188.92
	NORMAL	1,729.0	41.59	34.26	1,485.28	609.68	436.42	749.76	2.22	-2.22	0.19	176.76
	NORMAL	1,825.0	41.06	35.84	1,557.38	661.58	472.82	813.14	1.22	-0.55	1.65	117.52
	NORMAL	1,920.0	42.38	35.14	1,628.29	713.05	509.52	876.35	1.47	1.39	-0.74	340.30
	NORMAL	2,016.0	41.15	35.84	1,699.89	765.12	546.63	940.29	1.37	-1.28	0.73	159.50
	NORMAL	2,112.0	40.89	37.95	1,772.33	815.50	584.45	1,003.28	1.47	-0.27	2.20	101.43
	NORMAL	2,208.0	41.68	37.60	1,844.46	865.57	623.25	1,066.59	0.86	0.82	-0.36	343.57
	NORMAL	2,303.0	42.56	36.89	1,914.93	916.29	661.81	1,130.29	1.05	0.93	-0.75	331.32
	NORMAL	2,398.0	42.21	36.89	1,985.10	967.51	700.25	1,194.33	0.37	-0.37	0.00	180.00
	NORMAL	2,494.0	42.21	35.84	2,056.20	1,019.45	738.49	1,258.82	0.73	0.00	-1.09	269.61
	NORMAL	2,589.0	42.91	35.31	2,126.18	1,071.71	775.87	1,323.07	0.83	0.74	-0.56	332.69
	NORMAL	2,685.0	41.59	36.54	2,197.24	1,123.98	813.74	1,387.62	1.62	-1.38	1.28	148.39
	NORMAL	2,781.0	41.51	37.42	2,269.08	1,174.84	852.04	1,451.28	0.61	-0.08	0.92	98.13
	NORMAL	2,876.0	40.36	36.89	2,340.85	1,224.45	889.63	1,513.51	1.26	-1.21	-0.56	196.60
	NORMAL	2,971.0	38.34	35.49	2,414.31	1,273.05	925.21	1,573.74	2.32	-2.13	-1.47	203.18
	NORMAL	3,066.0	36.05	35.84	2,489.98	1,319.71	958.69	1,631.17	2.42	-2.41	0.37	174.86
	NORMAL	3,161.0	34.82	37.25	2,567.38	1,363.96	991.47	1,686.24	1.55	-1.29	1.48	146.96
	NORMAL	3,257.0	33.41	33.56	2,646.87	1,407.81	1,022.68	1,740.06	2.61	-1.47	-3.84	234.22
	NORMAL	3,352.0	30.86	33.38	2,727.31	1,449.96	1,050.55	1,790.53	2.69	-2.68	-0.19	182.07
	NORMAL	3,447.0	28.49	33.73	2,809.84	1,489.15	1,076.54	1,837.52	2.50	-2.49	0.37	175.97
	NORMAL	3,542.0	26.64	35.49	2,894.06	1,525.34	1,101.49	1,881.46	2.13	-1.95	1.85	157.02
	NORMAL	3,638.0	24.53	37.95	2,980.64	1,558.58	1,126.24	1,922.90	2.46	-2.20	2.56	154.38
	NORMAL	3,733.0	22.42	36.54	3,067.78	1,588.69	1,149.16	1,960.73	2.30	-2.22	-1.48	194.26
	NORMAL	3,828.0	20.84	34.96	3,156.08	1,617.10	1,169.63	1,995.74	1.77	-1.66	-1.66	199.50
	NORMAL	3,923.0	18.99	33.03	3,245.40	1,643.91	1,187.74	2,028.08	2.07	-1.95	-2.03	198.66
	NORMAL	4,018.0	15.92	33.73	3,336.02	1,667.71	1,203.40	2,056.54	3.24	-3.23	0.74	176.42
9/17/2012	NORMAL	4,113.0	13.10	37.25	3,427.98	1,687.12	1,217.15	2,080.32	3.11	-2.97	3.71	164.33
	NORMAL	4,209.0	11.43	40.94	3,521.78	1,702.97	1,229.97	2,100.68	1.92	-1.74	3.84	156.65
	NORMAL	4,304.0	9.85	40.94	3,615.15	1,716.22	1,241.47	2,118.16	1.66	-1.66	0.00	180.00
	NORMAL	4,400.0	7.74	32.68	3,710.02	1,727.86	1,250.34	2,132.79	2.56	-2.20	-8.60	206.87
	NORMAL	4,496.0	5.89	30.22	3,805.34	1,737.56	1,256.31	2,144.15	1.95	-1.93	-2.56	187.75
	NORMAL	4,591.0	3.08	42.70	3,900.04	1,743.65	1,260.50	2,151.54	3.11	-2.96	13.14	167.00
	NORMAL	4,686.0	2.37	16.33	3,994.93	1,747.41	1,262.78	2,155.92	1.50	-0.75	-27.76	227.74
	NORMAL	4,781.0	3.60	8.59	4,089.80	1,752.24	1,263.78	2,160.41	1.36	1.29	-8.15	337.97
	NORMAL	4,876.0	3.96	17.21	4,184.60	1,758.33	1,265.19	2,166.17	0.71	0.38	9.07	62.00
	NORMAL	4,971.0	3.69	33.56	4,279.39	1,764.01	1,267.85	2,172.32	1.18	-0.28	17.21	111.97
	NORMAL	5,067.0	3.43	8.07	4,375.21	1,769.43	1,269.96	2,177.95	1.66	-0.27	-26.55	248.10
	NORMAL	5,162.0	1.23	352.25	4,470.12	1,773.25	1,270.23	2,181.19	2.39	-2.32	-16.65	188.49
	NORMAL	5,257.0	1.23	156.25	4,565.12	1,773.33	1,270.50	2,181.42	2.56	0.00	172.63	172.00
	NORMAL	5,352.0	0.79	114.94	4,660.10	1,772.12	1,271.50	2,181.03	0.87	-0.46	-43.48	219.33
	NORMAL	5,448.0	0.35	166.80	4,756.10	1,771.55	1,272.17	2,180.97	0.66	-0.46	54.02	154.37
	NORMAL	5,543.0	1.32	188.42	4,851.09	1,770.19	1,272.08	2,179.81	1.06	1.02	22.76	29.01
	NORMAL	5,638.0	0.79	187.54	4,946.07	1,768.46	1,271.83	2,178.26	0.56	-0.56	-0.93	181.31

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 (°)
9/17/2012	NORMAL	5,732.0	1.76	196.33	5,040.05	1,766.43	1,271.34	2,176.33	1.05	1.03	9.35	15.82
9/18/2012	NORMAL	5,827.0	1.32	195.45	5,135.01	1,763.97	1,270.64	2,173.94	0.46	-0.46	-0.93	182.64
	NORMAL	5,922.0	0.22	224.46	5,230.00	1,762.79	1,270.22	2,172.73	1.19	-1.16	30.54	174.59
	NORMAL	6,017.0	0.26	30.39	5,325.00	1,762.84	1,270.20	2,172.77	0.50	0.04	174.66	172.38
	NORMAL	6,113.0	0.88	22.13	5,421.00	1,763.72	1,270.59	2,173.70	0.65	0.65	-8.60	348.31
	NORMAL	6,208.0	1.05	65.37	5,515.98	1,764.75	1,271.65	2,175.16	0.77	0.18	45.52	99.09
	NORMAL	6,303.0	0.53	146.93	5,610.98	1,764.75	1,272.68	2,175.77	1.16	-0.55	85.85	151.66
	NORMAL	6,397.0	0.44	147.29	5,704.97	1,764.08	1,273.12	2,175.48	0.10	-0.10	0.38	178.24
9/19/2012	NORMAL	6,493.0	0.26	102.99	5,800.97	1,763.72	1,273.53	2,175.43	0.33	-0.19	-46.15	215.57
	NORMAL	6,588.0	0.53	25.65	5,895.97	1,764.07	1,273.93	2,175.95	0.56	0.28	-81.41	254.46
	NORMAL	6,683.0	1.50	303.91	5,990.96	1,765.16	1,273.09	2,176.34	1.60	1.02	-86.04	258.04
	NORMAL	6,779.0	2.20	248.89	6,086.91	1,765.20	1,270.32	2,174.74	1.89	0.73	-57.31	262.47
	NORMAL	6,874.0	1.32	248.01	6,181.87	1,764.13	1,267.61	2,172.28	0.93	-0.93	-0.93	181.32
	NORMAL	6,969.0	0.62	265.23	6,276.85	1,763.68	1,266.08	2,171.01	0.79	-0.74	18.13	165.85
	NORMAL	7,064.0	0.09	131.47	6,371.85	1,763.58	1,265.63	2,170.67	0.72	-0.56	-140.80	185.44
	NORMAL	7,160.0	0.97	112.83	6,467.85	1,763.22	1,266.43	2,170.85	0.92	0.92	-19.42	339.50
	NORMAL	7,255.0	1.14	110.02	6,562.83	1,762.58	1,268.06	2,171.30	0.19	0.18	-2.96	341.66
	NORMAL	7,351.0	1.23	49.20	6,658.81	1,762.93	1,269.74	2,172.56	1.25	0.09	-63.35	243.30
9/20/2012	NORMAL	7,445.0	2.55	11.23	6,752.76	1,765.64	1,270.91	2,175.44	1.86	1.40	-40.39	296.46
	NORMAL	7,541.0	3.34	8.07	6,848.64	1,770.50	1,271.72	2,179.85	0.84	0.82	-3.29	346.81
	NORMAL	7,636.0	4.40	14.75	6,943.42	1,776.77	1,273.03	2,185.69	1.21	1.12	7.03	26.40
	NORMAL	7,731.0	4.92	21.26	7,038.11	1,784.09	1,275.44	2,193.02	0.78	0.55	6.85	48.76
	NORMAL	7,805.0	5.72	21.78	7,111.79	1,790.47	1,277.96	2,199.67	1.08	1.08	0.70	3.71
	NORMAL	7,850.0	5.72	21.78	7,156.56	1,794.64	1,279.62	2,204.01	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

