

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 41-28	Wellbore No.	
Well Name	KP 41-28	Common Name	KP 41-28
Project	KP 28-06S-091W	Site	KP 41-28 Pad
Vertical Section Azimuth	309.47 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	11/5/2011	UWI	KP 41-28
Active Datum	KB @7,079.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	11/5/2011	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 (°)
11/5/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/5/2011	NORMAL	71.0	0.18	29.97	71.00	0.10	0.06	0.02	0.25	0.25	0.00	29.97
	NORMAL	162.0	2.02	317.99	161.98	1.41	-0.95	1.63	2.17	2.02	-79.10	283.04
	NORMAL	253.0	2.73	309.11	252.90	3.97	-3.70	5.38	0.88	0.78	-9.76	328.12
	NORMAL	344.0	3.52	301.64	343.77	6.80	-7.76	10.32	0.97	0.87	-8.21	328.97
	NORMAL	435.0	3.26	306.91	434.61	9.82	-12.21	15.67	0.45	-0.29	5.79	132.45
11/6/2011	NORMAL	511.0	3.49	310.76	510.48	12.63	-15.69	20.14	0.42	0.30	5.07	46.51
	NORMAL	601.0	4.31	304.01	600.27	16.31	-20.57	26.25	1.04	0.91	-7.50	327.36
	NORMAL	692.0	3.78	320.97	691.04	20.55	-25.29	32.59	1.43	-0.58	18.64	122.20
	NORMAL	783.0	2.28	305.47	781.91	23.93	-28.65	37.33	1.86	-1.65	-17.03	201.05
	NORMAL	875.0	2.40	294.83	873.84	25.81	-31.89	41.02	0.49	0.13	-11.57	280.08
	NORMAL	965.0	3.26	300.55	963.73	27.90	-35.81	45.38	1.00	0.96	6.36	21.05
	NORMAL	1,060.0	3.42	307.71	1,058.57	31.00	-40.37	50.88	0.47	0.17	7.54	72.61
	NORMAL	1,152.0	3.51	311.69	1,150.40	34.56	-44.65	56.43	0.28	0.10	4.33	71.48
	NORMAL	1,247.0	4.08	319.47	1,245.19	39.06	-49.02	62.67	0.81	0.60	8.19	46.02
11/6/2011	NORMAL	1,325.0	4.05	313.88	1,322.99	43.08	-52.81	68.15	0.51	-0.04	-7.17	262.89
11/7/2011	NORMAL	1,438.0	4.31	315.11	1,435.69	48.85	-58.68	76.35	0.24	0.23	1.09	19.64
	NORMAL	1,533.0	3.06	298.01	1,530.50	52.57	-63.44	82.39	1.74	-1.32	-18.00	213.00
	NORMAL	1,627.0	3.31	314.44	1,624.36	55.65	-67.59	87.55	1.00	0.27	17.48	82.99
	NORMAL	1,721.0	2.90	308.14	1,718.22	59.02	-71.40	92.63	0.57	-0.44	-6.70	216.65
	NORMAL	1,816.0	2.56	315.99	1,813.11	62.03	-74.76	97.14	0.53	-0.36	8.26	136.16

2.1.2 Survey Stations (Continued)

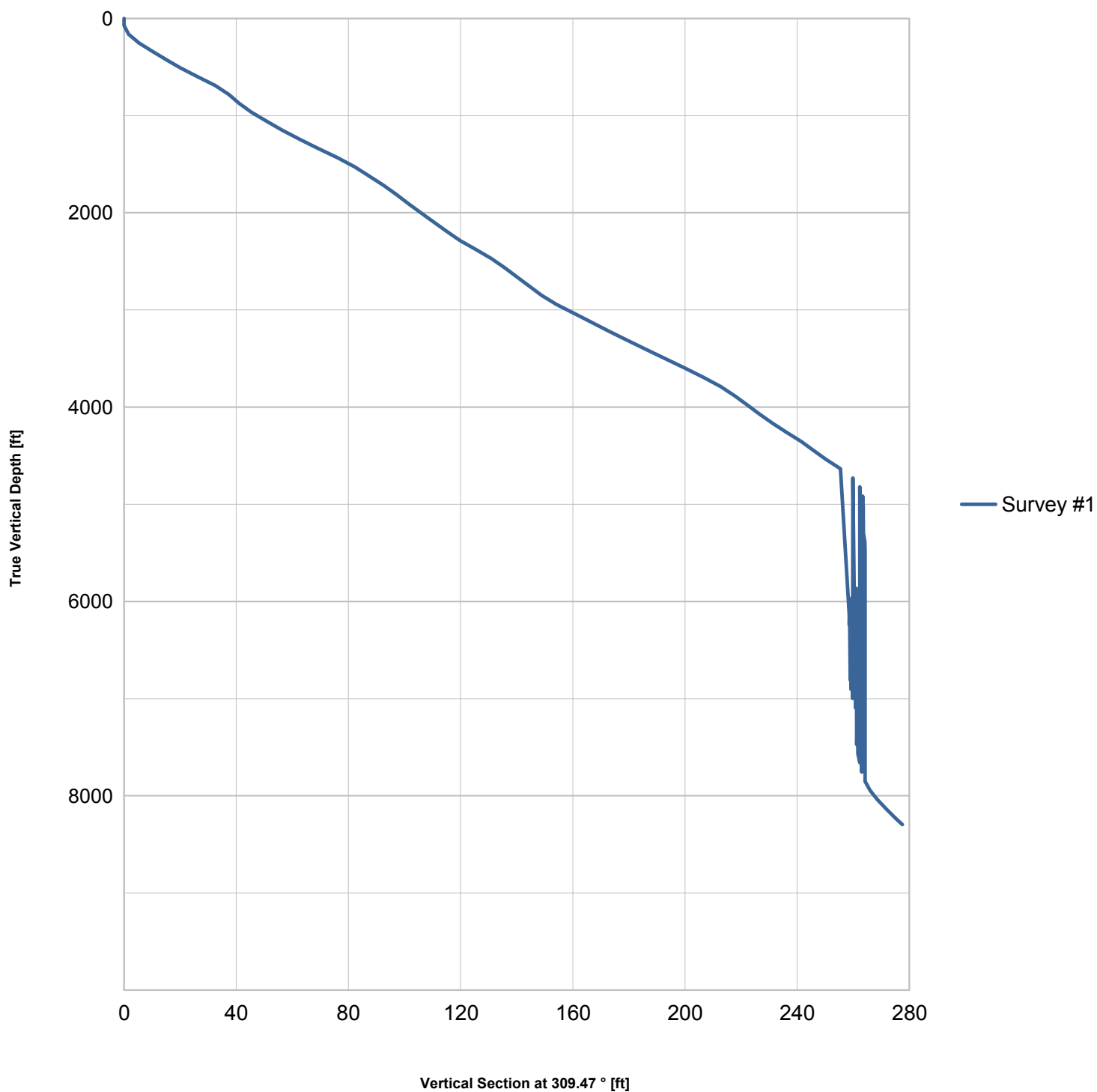
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
11/7/2011	NORMAL	1,910.0	2.73	307.08	1,907.01	64.89	-78.01	101.46	0.47	0.18	-9.48	287.97
	NORMAL	2,005.0	2.68	306.57	2,001.90	67.58	-81.59	105.94	0.06	-0.05	-0.54	205.45
	NORMAL	2,100.0	2.87	316.87	2,096.79	70.63	-85.00	110.52	0.56	0.20	10.84	74.34
	NORMAL	2,194.0	2.71	319.09	2,190.68	74.03	-88.07	115.04	0.21	-0.17	2.36	147.07
	NORMAL	2,288.0	3.13	321.51	2,284.56	77.72	-91.12	119.75	0.47	0.45	2.57	17.57
11/8/2011	NORMAL	2,381.0	3.97	307.65	2,377.38	81.67	-95.25	125.45	1.29	0.90	-14.90	307.33
	NORMAL	2,474.0	2.91	296.18	2,470.21	84.68	-99.92	130.96	1.35	-1.14	-12.33	207.36
	NORMAL	2,569.0	2.86	312.06	2,565.10	87.33	-103.84	135.68	0.84	-0.05	16.72	101.49
	NORMAL	2,664.0	2.58	295.64	2,659.99	89.85	-107.53	140.12	0.87	-0.29	-17.28	242.16
	NORMAL	2,758.0	2.99	287.22	2,753.88	91.49	-111.78	144.44	0.62	0.44	-8.96	310.81
	NORMAL	2,853.0	2.58	302.25	2,848.77	93.36	-115.95	148.86	0.88	-0.43	15.82	126.68
	NORMAL	2,948.0	3.83	300.94	2,943.62	96.13	-120.48	154.12	1.32	1.32	-1.38	355.99
	NORMAL	3,042.0	4.13	302.12	3,037.39	99.55	-126.04	160.58	0.33	0.32	1.26	15.86
	NORMAL	3,136.0	3.80	307.30	3,131.17	103.24	-131.39	167.05	0.52	-0.35	5.51	135.22
	NORMAL	3,230.0	3.88	304.86	3,224.95	106.94	-136.47	173.33	0.19	0.09	-2.60	294.86
	NORMAL	3,324.0	4.15	310.63	3,318.72	110.97	-141.67	179.90	0.52	0.29	6.14	59.14
	NORMAL	3,418.0	3.98	310.06	3,412.49	115.29	-146.74	186.56	0.19	-0.18	-0.61	193.09
	NORMAL	3,513.0	4.31	309.89	3,507.24	119.70	-152.01	193.43	0.35	0.35	-0.18	357.78
	NORMAL	3,608.0	3.85	314.15	3,602.00	124.21	-157.03	200.18	0.58	-0.48	4.48	148.73
	NORMAL	3,702.0	4.13	313.41	3,695.77	128.73	-161.76	206.70	0.30	0.30	-0.79	349.21
	NORMAL	3,796.0	3.25	313.76	3,789.57	132.90	-166.14	212.74	0.94	-0.94	0.37	178.71
	NORMAL	3,890.0	2.82	311.31	3,883.44	136.27	-169.80	217.70	0.48	-0.46	-2.61	195.57
	NORMAL	3,984.0	2.63	318.25	3,977.34	139.41	-172.97	222.15	0.40	-0.20	7.38	123.37
	NORMAL	4,077.0	2.77	311.34	4,070.23	142.48	-176.08	226.50	0.38	0.15	-7.43	289.80
11/9/2011	NORMAL	4,172.0	2.81	311.39	4,165.12	145.54	-179.55	231.12	0.04	0.04	0.05	3.51
	NORMAL	4,266.0	3.48	312.02	4,258.98	148.97	-183.40	236.28	0.71	0.71	0.67	3.27
	NORMAL	4,360.0	2.77	308.28	4,352.84	152.29	-187.30	241.40	0.79	-0.76	-3.98	194.16
	NORMAL	4,453.0	2.79	302.93	4,445.73	154.91	-190.97	245.89	0.28	0.02	-5.75	271.73
	NORMAL	4,548.0	2.70	302.79	4,540.62	157.38	-194.79	250.41	0.09	-0.09	-0.15	184.19
	NORMAL	4,642.0	3.40	303.01	4,634.49	160.10	-198.99	255.38	0.74	0.74	0.23	1.07
	NORMAL	4,736.0	2.11	308.05	4,728.38	162.68	-202.69	259.88	1.40	-1.37	5.36	171.87
	NORMAL	4,829.0	1.23	351.91	4,821.34	164.73	-204.18	262.33	1.60	-0.95	47.16	145.13
	NORMAL	4,923.0	0.86	18.85	4,915.32	166.39	-204.09	263.32	0.64	-0.39	28.66	139.94
	NORMAL	5,018.0	0.19	73.35	5,010.32	167.11	-203.71	263.49	0.81	-0.71	57.37	168.34
	NORMAL	5,112.0	0.62	184.56	5,104.32	166.65	-203.60	263.11	0.76	0.46	118.31	125.63
	NORMAL	5,208.0	0.53	266.13	5,200.31	166.10	-204.08	263.13	0.79	-0.09	84.97	135.97
11/10/2011	NORMAL	5,302.0	0.17	284.64	5,294.31	166.11	-204.65	263.58	0.40	-0.38	19.69	171.67
	NORMAL	5,397.0	0.53	308.75	5,389.31	166.42	-205.13	264.14	0.40	0.38	25.38	34.61
	NORMAL	5,493.0	0.50	133.82	5,485.31	166.41	-205.18	264.17	1.07	-0.03	-182.22	182.46
	NORMAL	5,588.0	0.57	98.47	5,580.31	166.05	-204.41	263.35	0.35	0.07	-37.21	263.93
	NORMAL	5,683.0	0.30	291.81	5,675.30	166.07	-204.17	263.18	0.91	-0.28	-175.43	184.59
	NORMAL	5,777.0	0.94	109.49	5,769.30	165.91	-203.68	262.69	1.32	0.68	189.02	178.24
	NORMAL	5,873.0	1.14	110.38	5,865.29	165.31	-202.04	261.05	0.21	0.21	0.93	5.06
	NORMAL	5,968.0	0.83	139.71	5,960.27	164.46	-200.71	259.48	0.61	-0.33	30.87	135.68
11/11/2011	NORMAL	6,061.0	0.35	195.11	6,053.27	163.67	-200.35	258.70	0.75	-0.52	59.57	155.47
	NORMAL	6,156.0	0.31	214.23	6,148.27	163.18	-200.57	258.56	0.12	-0.04	20.13	119.35
	NORMAL	6,250.0	0.67	226.76	6,242.26	162.59	-201.11	258.60	0.40	0.38	13.33	22.90
	NORMAL	6,343.0	1.27	240.65	6,335.25	161.71	-202.40	259.04	0.69	0.65	14.94	28.44
	NORMAL	6,438.0	0.57	250.20	6,430.24	161.04	-203.77	259.67	0.75	-0.74	10.05	172.39
	NORMAL	6,532.0	1.20	49.63	6,524.23	161.52	-203.46	259.73	1.86	0.67	169.61	166.02
	NORMAL	6,627.0	1.49	40.42	6,619.20	163.10	-201.90	259.54	0.38	0.31	-9.69	318.63
	NORMAL	6,723.0	0.94	67.96	6,715.18	164.35	-200.36	259.14	0.82	-0.57	28.69	146.49
	NORMAL	6,817.0	0.33	242.33	6,809.18	164.51	-199.88	258.88	1.35	-0.65	185.50	178.54
	NORMAL	6,912.0	0.88	239.58	6,904.17	164.02	-200.75	259.23	0.58	0.58	-2.89	355.60
11/12/2011	NORMAL	7,006.0	0.79	247.32	6,998.16	163.40	-201.97	259.78	0.15	-0.10	8.23	132.41
	NORMAL	7,102.0	1.03	272.04	7,094.15	163.18	-203.45	260.78	0.47	0.25	25.75	71.32
	NORMAL	7,197.0	0.44	20.30	7,189.15	163.55	-204.17	261.58	1.31	-0.62	113.96	160.31

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 (°)
11/12/2011	NORMAL	7,292.0	0.61	57.00	7,284.14	164.17	-203.62	261.54	0.39	0.18	38.63	82.33
	NORMAL	7,387.0	0.61	53.22	7,379.14	164.74	-202.79	261.27	0.04	0.00	-3.98	268.11
	NORMAL	7,480.0	0.53	28.82	7,472.13	165.42	-202.19	261.23	0.27	-0.09	-26.24	239.82
	NORMAL	7,575.0	0.67	4.11	7,567.13	166.36	-201.94	261.64	0.31	0.15	-26.01	285.69
	NORMAL	7,668.0	0.79	5.62	7,660.12	167.54	-201.84	262.31	0.13	0.13	1.62	9.86
11/13/2011	NORMAL	7,763.0	0.70	358.67	7,755.11	168.77	-201.79	263.05	0.13	-0.09	-7.32	221.68
	NORMAL	7,858.0	0.91	301.95	7,850.10	169.75	-202.44	264.18	0.83	0.22	-59.71	255.23
	NORMAL	7,953.0	1.34	296.50	7,945.09	170.64	-204.07	266.01	0.47	0.45	-5.74	343.29
	NORMAL	8,049.0	1.96	288.92	8,041.05	171.68	-206.63	268.64	0.68	0.65	-7.90	336.79
	NORMAL	8,144.0	2.10	288.68	8,135.99	172.76	-209.82	271.79	0.15	0.15	-0.25	356.41
	NORMAL	8,244.0	2.20	289.33	8,235.92	173.98	-213.36	275.30	0.10	0.10	0.65	14.03
	NORMAL	8,304.0	2.26	289.72	8,295.87	174.76	-215.56	277.50	0.10	0.10	0.65	14.39

3 Charts

3.1 Vertical Section View



3.2 Plan View

