

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	KP 21-17	Wellbore No.	
Well Name	KP 21-17	Common Name	KP 21-17
Project	KP 08-06S-91W	Site	KP 24-8 Pad
Vertical Section Azimuth	225.10 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	2/15/2012	UWI	KP 21-17
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	2/15/2012	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 (°)
2/15/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/15/2012	NORMAL	105.0	0.62	261.74	105.00	-0.08	-0.56	0.46	0.59	0.59	0.00	261.74
	NORMAL	135.0	1.58	245.74	134.99	-0.27	-1.10	0.97	3.33	3.20	-53.33	334.15
	NORMAL	166.0	1.94	230.62	165.98	-0.78	-1.90	1.90	1.89	1.16	-48.77	300.07
	NORMAL	196.0	2.64	221.57	195.95	-1.62	-2.75	3.09	2.62	2.33	-30.17	328.11
	NORMAL	227.0	3.26	228.78	226.91	-2.74	-3.88	4.68	2.33	2.00	23.26	34.53
	NORMAL	257.0	3.61	229.75	256.86	-3.91	-5.25	6.48	1.18	1.17	3.23	9.91
	NORMAL	287.0	4.13	224.30	286.79	-5.29	-6.72	8.50	2.12	1.73	-18.17	321.99
2/16/2012	NORMAL	317.0	5.10	223.15	316.69	-7.04	-8.39	10.91	3.25	3.23	-3.83	353.98
	NORMAL	348.0	6.77	221.48	347.53	-9.41	-10.54	14.11	5.42	5.39	-5.39	353.27
	NORMAL	420.0	7.91	221.81	418.93	-16.29	-16.65	23.29	1.58	1.58	0.46	2.28
	NORMAL	511.0	8.44	221.54	509.01	-25.95	-25.26	36.21	0.58	0.58	-0.30	355.72
	NORMAL	602.0	7.29	225.02	599.15	-35.03	-33.77	48.65	1.37	-1.26	3.82	159.22
	NORMAL	693.0	7.83	227.78	689.36	-43.28	-42.44	60.61	0.71	0.59	3.03	35.29
	NORMAL	784.0	8.61	223.36	779.43	-52.40	-51.71	73.61	1.10	0.86	-4.86	318.78
	NORMAL	876.0	6.95	223.92	870.58	-61.41	-60.30	86.06	1.81	-1.80	0.61	177.66
	NORMAL	967.0	7.31	222.02	960.87	-69.68	-68.00	97.35	0.47	0.40	-2.09	325.83
	NORMAL	1,063.0	6.24	221.28	1,056.20	-78.14	-75.53	108.65	1.12	-1.11	-0.77	184.30
	NORMAL	1,158.0	7.02	222.13	1,150.56	-86.32	-82.83	119.60	0.83	0.82	0.89	7.59
	NORMAL	1,211.0	7.65	218.47	1,203.13	-91.49	-87.19	126.34	1.48	1.19	-6.91	321.61
2/17/2012	NORMAL	1,341.0	8.20	219.80	1,331.89	-105.39	-98.51	144.17	0.45	0.42	1.02	19.10

## 2.1.2 Survey Stations (Continued)

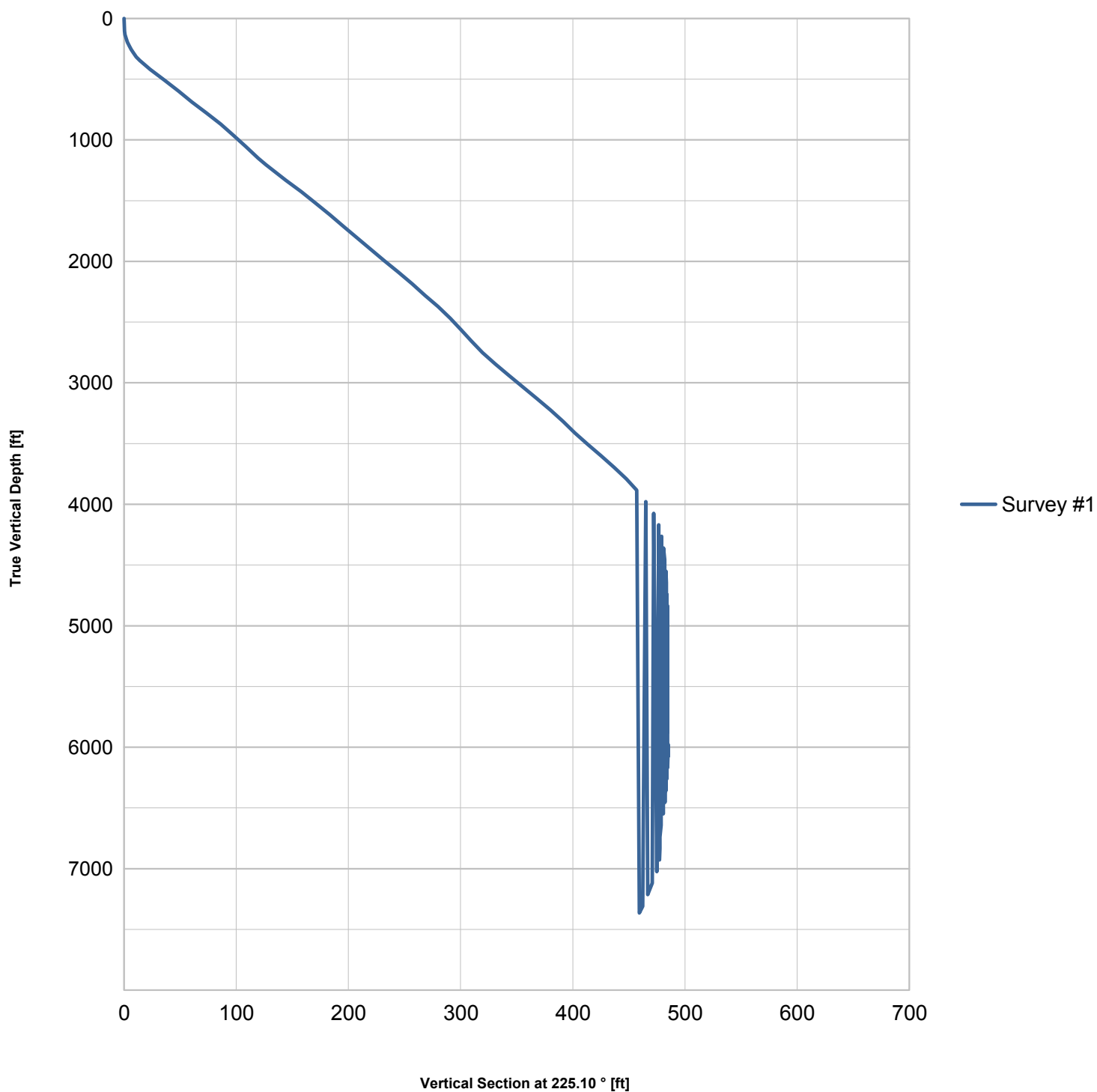
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
2/17/2012	NORMAL	1,437.0	8.30	223.80	1,426.90	-115.65	-107.69	157.91	0.61	0.10	4.17	82.10
	NORMAL	1,533.0	7.50	235.30	1,521.99	-124.21	-117.64	171.01	1.84	-0.83	11.98	122.46
	NORMAL	1,628.0	7.80	231.70	1,616.15	-131.74	-127.79	183.51	0.59	0.32	-3.79	300.25
	NORMAL	1,723.0	7.00	239.30	1,710.36	-138.69	-137.83	195.53	1.33	-0.84	8.00	132.99
	NORMAL	1,819.0	7.70	225.90	1,805.57	-146.15	-147.48	207.63	1.92	0.73	-13.96	285.47
	NORMAL	1,914.0	7.10	225.60	1,899.78	-154.69	-156.25	219.87	0.63	-0.63	-0.32	183.54
	NORMAL	2,010.0	7.40	222.60	1,995.01	-163.39	-164.67	231.98	0.50	0.31	-3.13	306.90
	NORMAL	2,105.0	7.80	225.80	2,089.18	-172.39	-173.43	244.53	0.61	0.42	3.37	48.21
	NORMAL	2,201.0	6.90	220.00	2,184.39	-181.35	-181.81	256.79	1.21	-0.94	-6.04	216.65
	NORMAL	2,296.0	6.90	223.80	2,278.70	-189.84	-189.43	268.18	0.48	0.00	4.00	91.89
	NORMAL	2,391.0	7.30	223.80	2,372.98	-198.31	-197.55	279.92	0.42	0.42	0.00	0.00
	NORMAL	2,487.0	5.70	226.10	2,468.36	-206.02	-205.21	290.78	1.69	-1.67	2.40	171.90
2/18/2012	NORMAL	2,582.0	5.80	229.50	2,562.88	-212.41	-212.26	300.29	0.37	0.11	3.58	75.34
	NORMAL	2,677.0	5.70	225.60	2,657.40	-218.83	-219.28	309.79	0.42	-0.11	-4.11	253.71
	NORMAL	2,771.0	6.30	230.70	2,750.89	-225.36	-226.61	319.59	0.85	0.64	5.43	44.18
	NORMAL	2,867.0	7.30	228.20	2,846.21	-232.76	-235.23	330.92	1.09	1.04	-2.60	342.27
	NORMAL	2,962.0	7.60	224.90	2,940.41	-241.24	-244.16	343.23	0.55	0.32	-3.47	303.39
	NORMAL	3,057.0	7.40	223.80	3,034.59	-250.10	-252.83	355.63	0.26	-0.21	-1.16	215.13
	NORMAL	3,153.0	7.40	224.00	3,129.80	-259.01	-261.41	367.99	0.03	0.00	0.21	90.10
	NORMAL	3,248.0	7.20	223.70	3,224.03	-267.72	-269.77	380.06	0.21	-0.21	-0.32	190.64
	NORMAL	3,343.0	6.40	224.20	3,318.36	-275.82	-277.57	391.31	0.84	-0.84	0.53	176.02
	NORMAL	3,438.0	6.30	221.70	3,412.77	-283.50	-284.73	401.81	0.31	-0.11	-2.63	248.88
	NORMAL	3,533.0	7.50	227.70	3,507.08	-291.57	-292.79	413.20	1.47	1.26	6.32	33.99
	NORMAL	3,628.0	7.10	229.80	3,601.31	-299.53	-301.86	425.25	0.51	-0.42	2.21	147.33
	NORMAL	3,722.0	7.00	231.40	3,694.60	-306.85	-310.77	436.73	0.23	-0.11	1.70	117.78
	NORMAL	3,817.0	6.20	224.20	3,788.98	-314.14	-318.87	447.61	1.21	-0.84	-7.58	222.43
	NORMAL	3,912.0	5.20	221.90	3,883.50	-321.03	-325.32	457.04	1.08	-1.05	-2.42	191.73
	NORMAL	4,007.0	4.60	228.10	3,978.16	-326.77	-331.03	465.14	0.84	-0.63	6.53	141.63
	NORMAL	4,103.0	3.80	221.40	4,073.90	-331.73	-336.00	472.16	0.98	-0.83	-6.98	208.21
	NORMAL	4,198.0	1.70	205.90	4,168.79	-335.36	-338.70	476.64	2.33	-2.21	-16.32	191.87
	NORMAL	4,293.0	1.30	218.00	4,263.75	-337.48	-339.98	479.04	0.53	-0.42	12.74	147.57
	NORMAL	4,389.0	1.00	192.70	4,359.73	-339.15	-340.83	480.82	0.61	-0.31	-26.35	227.19
	NORMAL	4,485.0	0.60	205.60	4,455.73	-340.42	-341.23	482.01	0.45	-0.42	13.44	162.12
	NORMAL	4,579.0	1.40	158.10	4,549.71	-341.93	-341.02	482.92	1.16	0.85	-50.53	288.53
	NORMAL	4,675.0	1.20	135.40	4,645.69	-343.74	-339.88	483.38	0.57	-0.21	-23.65	237.68
	NORMAL	4,770.0	0.70	185.20	4,740.68	-345.02	-339.23	483.83	0.97	-0.53	52.42	144.45
	NORMAL	4,865.0	0.30	164.10	4,835.67	-345.84	-339.21	484.40	0.46	-0.42	-22.21	194.42
2/19/2012	NORMAL	4,960.0	0.60	110.30	4,930.67	-346.25	-338.68	484.31	0.51	0.32	-56.63	276.41
	NORMAL	5,055.0	0.90	75.70	5,025.66	-346.24	-337.49	483.46	0.56	0.32	-36.42	285.41
	NORMAL	5,151.0	0.20	326.30	5,121.66	-345.91	-336.85	482.78	1.03	-0.73	-113.96	191.05
	NORMAL	5,246.0	0.30	298.90	5,216.66	-345.66	-337.16	482.81	0.16	0.11	-28.84	295.67
	NORMAL	5,341.0	0.60	16.80	5,311.65	-345.06	-337.24	482.45	0.64	0.32	82.00	106.54
	NORMAL	5,436.0	0.20	252.30	5,406.65	-344.63	-337.25	482.16	0.77	-0.42	-131.05	193.01
	NORMAL	5,531.0	0.10	230.70	5,501.65	-344.74	-337.47	482.39	0.12	-0.11	-22.74	198.98
	NORMAL	5,627.0	0.10	107.60	5,597.65	-344.82	-337.46	482.43	0.18	0.00	-128.23	208.45
	NORMAL	5,722.0	0.40	4.38	5,692.65	-344.51	-337.35	482.14	0.46	0.32	-108.65	243.82
	NORMAL	5,818.0	0.90	195.00	5,788.65	-344.90	-337.52	482.54	1.35	0.52	-176.44	187.36
	NORMAL	5,913.0	1.10	202.40	5,883.63	-346.47	-338.06	484.03	0.25	0.21	7.79	36.59
	NORMAL	6,008.0	0.30	270.40	5,978.63	-347.31	-338.66	485.04	1.08	-0.84	71.58	164.27
2/20/2012	NORMAL	6,103.0	0.30	351.80	6,073.63	-347.06	-338.94	485.07	0.41	0.00	85.68	130.70
	NORMAL	6,198.0	0.60	1.80	6,168.62	-346.32	-338.96	484.56	0.33	0.32	10.53	19.71
	NORMAL	6,293.0	1.20	353.00	6,263.61	-344.83	-339.07	483.58	0.65	0.63	-9.26	342.60
	NORMAL	6,388.0	0.80	130.10	6,358.60	-344.27	-338.68	482.92	1.97	-0.42	144.32	163.04
	NORMAL	6,483.0	1.10	87.40	6,453.59	-344.66	-337.26	482.18	0.79	0.32	-44.95	270.65
	NORMAL	6,578.0	1.20	77.60	6,548.57	-344.40	-335.38	480.67	0.23	0.11	-10.32	291.99
	NORMAL	6,673.0	1.50	70.20	6,643.55	-343.77	-333.24	478.71	0.36	0.32	-7.79	326.10
	NORMAL	6,768.0	0.50	141.70	6,738.53	-343.67	-331.81	477.63	1.50	-1.05	75.26	160.53

### 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 (°)
2/20/2012	NORMAL	6,863.0	0.60	124.90	6,833.53	-344.28	-331.15	477.59	0.20	0.11	-17.68	293.22
	NORMAL	6,958.0	0.50	82.20	6,928.53	-344.51	-330.33	477.17	0.43	-0.11	-44.95	235.56
	NORMAL	7,054.0	2.40	48.80	7,024.49	-343.13	-328.40	474.83	2.08	1.98	-34.79	318.70
	NORMAL	7,149.0	2.50	29.80	7,119.41	-340.02	-325.88	470.84	0.86	0.11	-20.00	267.46
	NORMAL	7,243.0	2.70	20.90	7,213.31	-336.18	-324.07	466.85	0.48	0.21	-9.47	291.86
2/21/2012	NORMAL	7,339.0	3.20	22.20	7,309.18	-331.58	-322.25	462.32	0.53	0.52	1.35	8.27
	NORMAL	7,395.0	3.20	24.10	7,365.09	-328.71	-321.02	459.42	0.19	0.00	3.39	90.95

### 3 Charts

#### 3.1 Vertical Section View



### 3.2 Plan View

