

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 43-21	Wellbore No.	1
Well Name	KP 43-21	Common Name	KP 43-21
Project	KP 28-06S-091W	Site	KP 41-28 Pad
Vertical Section Azimuth	359.16 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	3/16/2012	UWI	KP 43-21
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	3/16/2012	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 (°)
3/16/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/16/2012	NORMAL	85.0	0.26	187.56	85.00	-0.19	-0.03	-0.19	0.31	0.31	0.00	187.56
	NORMAL	162.0	2.90	4.75	161.97	1.58	0.11	1.58	4.10	3.43	230.12	177.42
	NORMAL	254.0	5.28	0.79	253.73	8.13	0.36	8.12	2.60	2.59	-4.30	351.25
3/17/2012	NORMAL	345.0	7.74	359.91	344.14	18.45	0.41	18.44	2.71	2.70	-0.97	357.24
	NORMAL	436.0	10.73	357.80	433.95	33.04	0.08	33.04	3.31	3.29	-2.32	352.50
	NORMAL	527.0	14.96	357.89	522.65	53.25	-0.68	53.26	4.65	4.65	0.10	0.31
	NORMAL	617.0	18.04	0.26	608.93	78.80	-1.05	78.81	3.50	3.42	2.63	13.47
	NORMAL	699.0	20.35	0.08	686.37	105.76	-0.97	105.77	2.82	2.82	-0.22	358.45
	NORMAL	789.0	23.65	357.84	769.81	139.46	-1.63	139.47	3.78	3.67	-2.49	344.69
	NORMAL	879.0	27.00	357.57	851.14	177.92	-3.17	177.95	3.72	3.72	-0.30	357.90
	NORMAL	970.0	29.86	358.00	931.16	221.21	-4.84	221.26	3.15	3.14	0.47	4.28
	NORMAL	1,065.0	32.54	359.94	1,012.42	270.40	-5.69	270.46	3.01	2.82	2.04	21.39
	NORMAL	1,159.0	36.41	0.48	1,089.89	323.60	-5.49	323.65	4.13	4.12	0.57	4.74
	NORMAL	1,254.0	39.79	359.38	1,164.64	382.21	-5.58	382.25	3.63	3.56	-1.16	348.21
	NORMAL	1,350.0	40.32	359.25	1,238.12	443.98	-6.32	444.03	0.56	0.55	-0.14	350.98
	NORMAL	1,440.0	39.38	359.45	1,307.22	501.65	-6.97	501.70	1.05	-1.04	0.22	172.31
3/18/2012	NORMAL	1,537.0	40.57	0.61	1,381.55	563.96	-6.93	564.00	1.45	1.23	1.20	32.50
	NORMAL	1,632.0	40.64	359.38	1,453.68	625.79	-6.94	625.82	0.85	0.07	-1.29	274.53
	NORMAL	1,727.0	40.48	358.02	1,525.85	687.54	-8.34	687.59	0.95	-0.17	-1.43	259.23
	NORMAL	1,823.0	39.72	357.28	1,599.28	749.33	-10.87	749.41	0.93	-0.79	-0.77	211.81

2.1.2 Survey Stations (Continued)

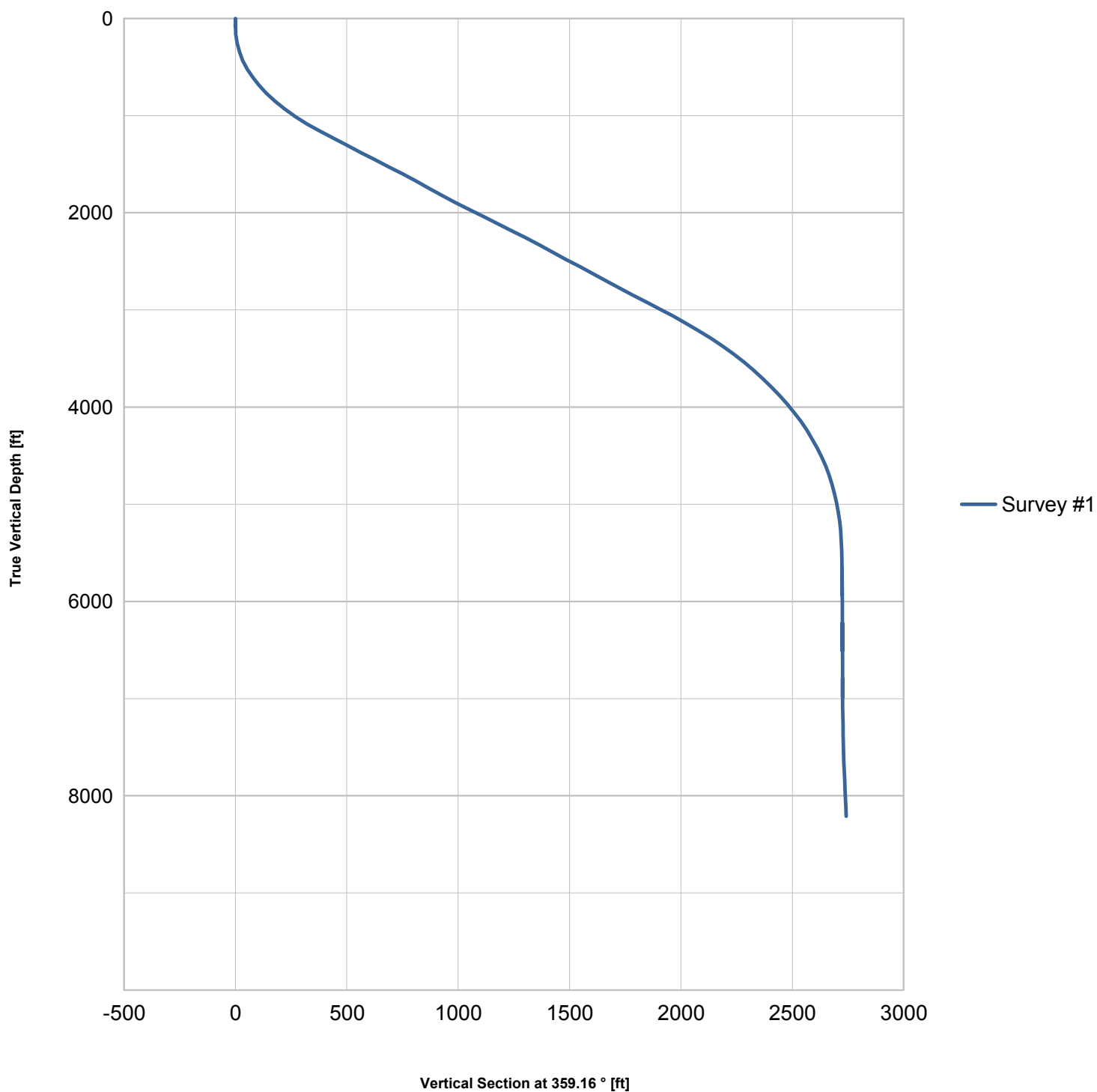
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/18/2012	NORMAL	1,918.0	38.70	358.86	1,672.89	809.34	-12.90	809.45	1.50	-1.07	1.66	136.21
	NORMAL	2,014.0	37.99	358.44	1,748.19	868.88	-14.30	869.00	0.79	-0.74	-0.44	199.99
	NORMAL	2,108.0	39.08	359.79	1,821.71	927.43	-15.20	927.56	1.46	1.16	1.44	38.18
3/19/2012	NORMAL	2,203.0	39.68	0.96	1,895.15	987.70	-14.80	987.81	1.00	0.63	1.23	51.51
	NORMAL	2,299.0	41.55	1.08	1,968.02	1,050.18	-13.69	1,050.27	1.95	1.95	0.12	2.44
	NORMAL	2,394.0	41.71	1.79	2,039.02	1,113.27	-12.11	1,113.33	0.52	0.17	0.75	71.53
	NORMAL	2,490.0	40.80	359.13	2,111.20	1,176.56	-11.58	1,176.61	2.06	-0.95	-2.77	241.58
	NORMAL	2,584.0	40.98	358.35	2,182.26	1,238.08	-12.94	1,238.14	0.58	0.19	-0.83	289.12
	NORMAL	2,680.0	41.12	358.37	2,254.66	1,301.10	-14.74	1,301.18	0.15	0.15	0.02	5.37
	NORMAL	2,775.0	38.75	357.48	2,327.50	1,362.04	-16.94	1,362.14	2.57	-2.49	-0.94	193.21
	NORMAL	2,868.0	38.14	357.01	2,400.34	1,419.79	-19.72	1,419.93	0.73	-0.66	-0.51	205.41
	NORMAL	2,964.0	39.62	357.51	2,475.07	1,479.98	-22.59	1,480.15	1.58	1.54	0.52	12.17
	NORMAL	3,059.0	39.50	359.98	2,548.31	1,540.46	-23.92	1,540.64	1.66	-0.13	2.60	95.31
	NORMAL	3,155.0	39.24	0.09	2,622.53	1,601.35	-23.88	1,601.53	0.28	-0.27	0.11	165.02
	NORMAL	3,250.0	38.45	359.58	2,696.52	1,660.94	-24.05	1,661.11	0.90	-0.83	-0.54	201.85
	NORMAL	3,345.0	39.64	359.54	2,770.30	1,720.78	-24.51	1,720.95	1.25	1.25	-0.04	358.77
	NORMAL	3,440.0	39.22	358.98	2,843.68	1,781.11	-25.29	1,781.29	0.58	-0.44	-0.59	220.04
	NORMAL	3,535.0	40.40	359.30	2,916.65	1,841.93	-26.20	1,842.11	1.26	1.24	0.34	9.97
	NORMAL	3,630.0	40.66	359.19	2,988.86	1,903.66	-27.01	1,903.85	0.28	0.27	-0.12	344.59
	NORMAL	3,724.0	38.90	359.29	3,061.09	1,963.79	-27.81	1,963.99	1.87	-1.87	0.11	177.96
	NORMAL	3,819.0	36.78	359.83	3,136.11	2,022.07	-28.27	2,022.26	2.26	-2.23	0.57	171.33
	NORMAL	3,914.0	35.75	359.70	3,212.71	2,078.26	-28.50	2,078.46	1.09	-1.08	-0.14	184.22
	NORMAL	4,009.0	34.29	359.06	3,290.51	2,132.77	-29.08	2,132.97	1.58	-1.54	-0.67	193.86
	NORMAL	4,105.0	32.61	359.17	3,370.60	2,185.68	-29.90	2,185.88	1.75	-1.75	0.11	177.98
	NORMAL	4,200.0	30.37	0.08	3,451.61	2,235.30	-30.24	2,235.50	2.41	-2.36	0.96	168.41
3/20/2012	NORMAL	4,296.0	28.20	358.98	3,535.34	2,282.25	-30.61	2,282.45	2.33	-2.26	-1.15	193.45
	NORMAL	4,391.0	26.18	359.84	3,619.83	2,325.65	-31.06	2,325.86	2.17	-2.13	0.91	169.37
	NORMAL	4,486.0	24.97	359.42	3,705.52	2,366.66	-31.33	2,366.87	1.29	-1.27	-0.44	188.33
	NORMAL	4,581.0	23.65	359.24	3,792.10	2,405.77	-31.78	2,405.98	1.39	-1.39	-0.19	183.13
	NORMAL	4,676.0	21.32	358.86	3,879.87	2,442.09	-32.38	2,442.31	2.46	-2.45	-0.40	183.39
	NORMAL	4,771.0	20.91	358.37	3,968.49	2,476.31	-33.20	2,476.53	0.47	-0.43	-0.52	203.07
	NORMAL	4,866.0	19.43	358.45	4,057.66	2,509.05	-34.11	2,509.28	1.56	-1.56	0.08	178.97
	NORMAL	4,961.0	17.41	0.03	4,147.79	2,539.06	-34.53	2,539.29	2.19	-2.13	1.66	166.87
	NORMAL	5,056.0	14.90	358.08	4,239.04	2,565.48	-34.94	2,565.72	2.70	-2.64	-2.05	191.26
	NORMAL	5,151.0	14.05	356.33	4,331.02	2,589.20	-36.08	2,589.45	1.01	-0.89	-1.84	206.39
	NORMAL	5,246.0	13.38	359.27	4,423.31	2,611.70	-36.96	2,611.96	1.02	-0.71	3.09	135.29
	NORMAL	5,341.0	11.96	4.00	4,516.00	2,632.51	-36.41	2,632.76	1.85	-1.49	4.98	146.14
	NORMAL	5,436.0	10.02	4.18	4,609.25	2,650.57	-35.13	2,650.80	2.04	-2.04	0.19	179.07
	NORMAL	5,531.0	7.93	0.63	4,703.08	2,665.37	-34.45	2,665.59	2.27	-2.20	-3.74	193.09
3/21/2012	NORMAL	5,627.0	7.34	0.92	4,798.23	2,678.12	-34.28	2,678.34	0.62	-0.61	0.30	176.41
	NORMAL	5,722.0	6.08	1.79	4,892.58	2,689.22	-34.02	2,689.43	1.33	-1.33	0.92	175.82
	NORMAL	5,818.0	5.04	0.07	4,988.13	2,698.52	-33.86	2,698.73	1.10	-1.08	-1.79	188.25
	NORMAL	5,913.0	4.79	10.03	5,082.78	2,706.60	-33.16	2,706.79	0.93	-0.26	10.48	111.25
	NORMAL	6,008.0	3.23	9.63	5,177.54	2,713.14	-32.03	2,713.32	1.64	-1.64	-0.42	180.83
	NORMAL	6,104.0	1.49	359.68	5,273.46	2,717.06	-31.58	2,717.23	1.86	-1.81	-10.36	188.31
	NORMAL	6,199.0	1.42	4.03	5,368.43	2,719.47	-31.51	2,719.64	0.14	-0.07	4.58	124.53
	NORMAL	6,294.0	0.93	1.59	5,463.41	2,721.41	-31.40	2,721.58	0.52	-0.52	-2.57	184.61
	NORMAL	6,390.0	0.94	349.09	5,559.40	2,722.96	-31.53	2,723.13	0.21	0.01	-13.02	266.55
	NORMAL	6,485.0	0.62	65.77	5,654.39	2,723.94	-31.21	2,724.11	1.05	-0.34	80.72	142.88
	NORMAL	6,578.0	0.70	95.74	5,747.38	2,724.09	-30.18	2,724.24	0.38	0.09	32.23	92.23
	NORMAL	6,673.0	0.45	105.24	5,842.38	2,723.93	-29.25	2,724.07	0.28	-0.26	10.00	163.83
3/22/2012	NORMAL	6,767.0	0.44	68.41	5,936.37	2,723.97	-28.55	2,724.10	0.30	-0.01	-39.18	249.65
	NORMAL	6,862.0	0.53	69.46	6,031.37	2,724.26	-27.80	2,724.37	0.10	0.09	1.11	6.17
	NORMAL	6,957.0	0.44	57.96	6,126.37	2,724.61	-27.08	2,724.71	0.14	-0.09	-12.11	221.59
	NORMAL	7,052.0	0.29	37.11	6,221.37	2,724.99	-26.63	2,725.09	0.21	-0.16	-21.95	211.42
	NORMAL	7,148.0	0.17	257.34	6,317.37	2,725.15	-26.62	2,725.25	0.45	-0.12	-145.59	194.66
	NORMAL	7,244.0	0.36	259.51	6,413.36	2,725.07	-27.06	2,725.17	0.20	0.20	2.26	4.11

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 (°)
3/22/2012	NORMAL	7,339.0	0.33	261.53	6,508.36	2,724.97	-27.62	2,725.09	0.03	-0.03	2.13	158.94
	NORMAL	7,434.0	0.75	291.76	6,603.36	2,725.16	-28.47	2,725.29	0.52	0.44	31.82	49.90
	NORMAL	7,529.0	0.54	298.38	6,698.35	2,725.61	-29.44	2,725.75	0.23	-0.22	6.97	163.75
	NORMAL	7,624.0	0.55	276.99	6,793.35	2,725.88	-30.29	2,726.03	0.21	0.01	-22.52	262.09
	NORMAL	7,720.0	0.95	266.02	6,889.34	2,725.88	-31.54	2,726.05	0.44	0.42	-11.43	334.71
3/23/2012	NORMAL	7,815.0	0.27	264.50	6,984.33	2,725.80	-32.55	2,725.98	0.72	-0.72	-1.60	180.60
	NORMAL	7,910.0	0.20	358.21	7,079.33	2,725.94	-32.77	2,726.13	0.36	-0.07	98.64	144.80
	NORMAL	8,005.0	0.54	30.21	7,174.33	2,726.50	-32.55	2,726.68	0.41	0.36	33.68	47.97
	NORMAL	8,101.0	0.79	24.90	7,270.33	2,727.49	-32.05	2,727.66	0.27	0.26	-5.53	343.49
	NORMAL	8,196.0	0.38	59.21	7,365.32	2,728.24	-31.50	2,728.41	0.55	-0.43	36.12	155.78
3/24/2012	NORMAL	8,291.0	0.60	30.12	7,460.32	2,728.83	-30.98	2,729.00	0.34	0.23	-30.62	296.32
	NORMAL	8,386.0	0.79	30.00	7,555.31	2,729.83	-30.40	2,729.98	0.20	0.20	-0.13	359.50
	NORMAL	8,482.0	1.13	18.62	7,651.30	2,731.30	-29.77	2,731.45	0.40	0.35	-11.85	324.95
	NORMAL	8,577.0	1.29	2.06	7,746.28	2,733.26	-29.43	2,733.40	0.40	0.17	-17.43	286.16
	NORMAL	8,673.0	1.03	321.57	7,842.26	2,735.01	-29.93	2,735.16	0.87	-0.27	-42.18	232.86
	NORMAL	8,769.0	1.32	322.29	7,938.24	2,736.57	-31.14	2,736.73	0.30	0.30	0.75	3.27
	NORMAL	8,864.0	1.36	326.05	8,033.21	2,738.37	-32.44	2,738.55	0.10	0.04	3.96	67.43
	NORMAL	8,959.0	1.55	325.95	8,128.18	2,740.37	-33.79	2,740.57	0.20	0.20	-0.11	359.18
	NORMAL	8,980.0	1.50	324.25	8,149.17	2,740.82	-34.11	2,741.03	0.32	-0.24	-8.10	221.29
	NORMAL	9,040.0	1.36	319.39	8,209.15	2,742.00	-35.03	2,742.22	0.31	-0.23	-8.10	218.49

3 Charts

3.1 Vertical Section View



3.2 Plan View

