

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	KP 311-17	Wellbore No.	
Well Name	KP 311-17 ST 01	Common Name	KP 311-17 ST 01
Project	KP 08-06S-91W	Site	KP 24-8 Pad
Vertical Section Azimuth	247.44 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	4/22/2012	UWI	KP 311-17
Active Datum	KB @6,552.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #2

Survey Name	Survey #2	Company	
Date Started	5/3/2012	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 (°)
5/3/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/3/2012	NORMAL	85.0	1.50	267.19	84.99	-0.05	-1.11	1.05	1.76	1.76	0.00	267.19
	NORMAL	105.0	3.52	263.32	104.97	-0.14	-1.98	1.88	10.13	10.10	-19.35	353.27
	NORMAL	115.0	4.66	263.10	114.94	-0.22	-2.69	2.57	11.40	11.40	-2.20	359.10
	NORMAL	135.0	6.33	257.26	134.85	-0.56	-4.57	4.44	8.80	8.35	-29.20	338.56
	NORMAL	166.0	6.95	250.94	165.64	-1.55	-8.01	8.00	3.09	2.00	-20.39	307.14
	NORMAL	196.0	7.13	244.51	195.42	-2.95	-11.41	11.67	2.69	0.60	-21.43	279.66
5/4/2012	NORMAL	226.0	7.39	240.29	225.18	-4.70	-14.77	15.44	1.98	0.87	-14.07	293.89
	NORMAL	256.0	7.92	242.05	254.91	-6.63	-18.27	19.41	1.93	1.77	5.87	24.74
	NORMAL	287.0	7.62	248.20	285.63	-8.39	-22.06	23.59	2.85	-0.97	19.84	112.87
	NORMAL	318.0	7.57	251.37	316.35	-9.81	-25.90	27.69	1.36	-0.16	10.23	98.37
	NORMAL	348.0	7.57	245.57	346.09	-11.26	-29.58	31.63	2.55	0.00	-19.33	267.13
	NORMAL	378.0	8.01	239.00	375.82	-13.15	-33.17	35.68	3.31	1.47	-21.90	293.01
	NORMAL	408.0	8.71	244.07	405.50	-15.22	-37.00	40.01	3.39	2.33	16.90	49.01
	NORMAL	438.0	9.15	243.98	435.14	-17.26	-41.19	44.66	1.47	1.47	-0.30	358.14
	NORMAL	469.0	10.38	248.38	465.69	-19.37	-46.00	49.91	4.64	3.97	14.19	33.43
	NORMAL	499.0	11.44	247.06	495.14	-21.53	-51.25	55.59	3.63	3.53	-4.40	346.09
	NORMAL	530.0	12.40	250.49	525.47	-23.84	-57.22	61.99	3.85	3.10	11.06	38.11
	NORMAL	561.0	13.72	248.20	555.67	-26.31	-63.77	68.99	4.57	4.26	-7.39	337.48
	NORMAL	591.0	15.31	248.12	584.71	-29.11	-70.75	76.51	5.30	5.30	-0.27	359.24
	NORMAL	621.0	16.89	248.20	613.54	-32.21	-78.47	84.82	5.27	5.27	0.27	0.84

## 2.1.2 Survey Stations (Continued)

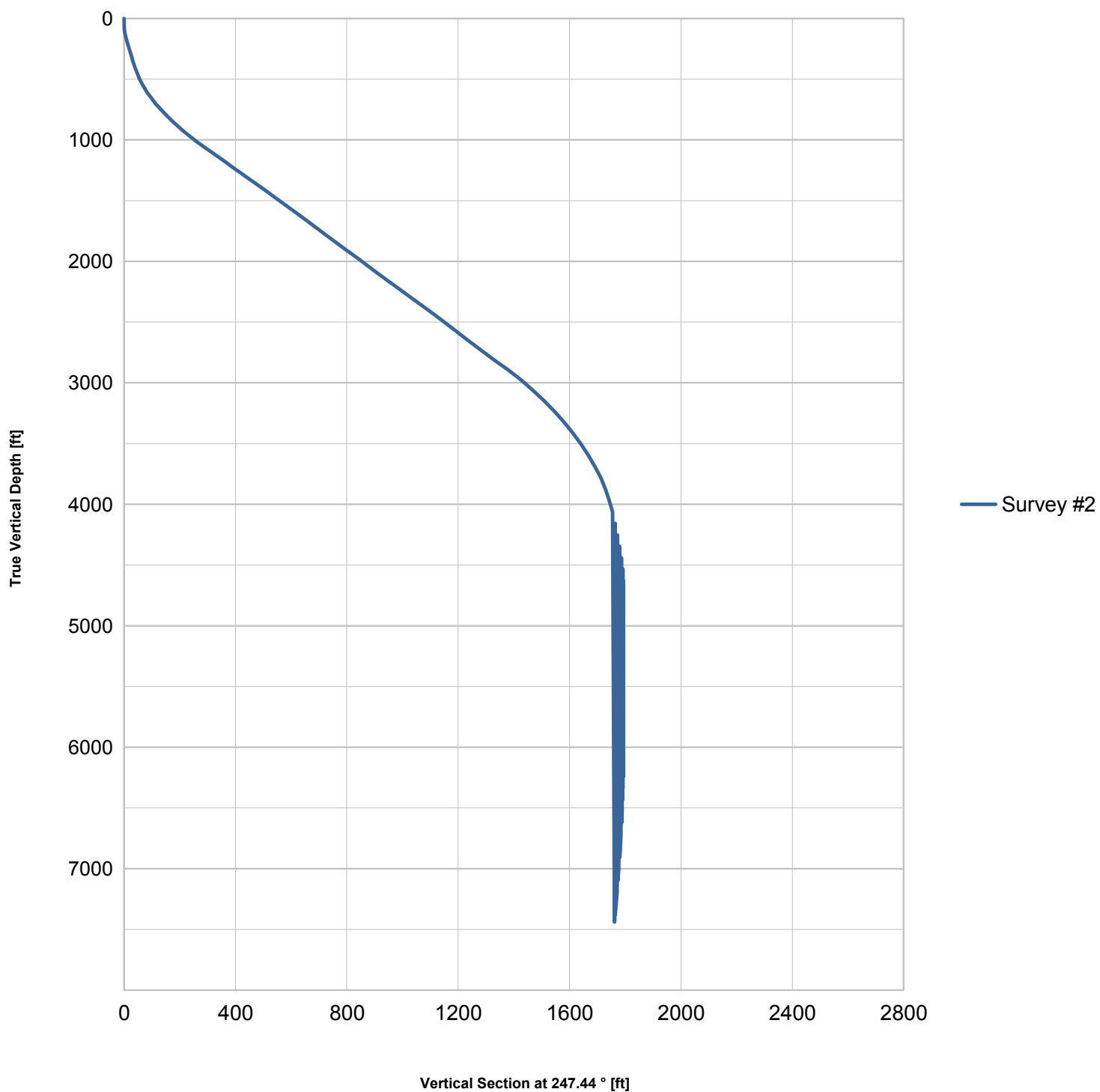
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
5/4/2012	NORMAL	651.0	17.16	248.03	642.22	-35.48	-86.62	93.61	0.92	0.90	-0.57	349.47
	NORMAL	682.0	18.12	247.85	671.76	-39.01	-95.33	103.00	3.10	3.10	-0.58	356.66
	NORMAL	712.0	19.71	247.94	700.14	-42.67	-104.34	112.73	5.30	5.30	0.30	1.09
	NORMAL	804.0	23.58	246.36	785.64	-55.88	-135.59	146.65	4.25	4.21	-1.72	350.70
	NORMAL	874.0	24.43	246.95	849.59	-67.16	-161.73	175.12	1.26	1.21	0.84	16.04
	NORMAL	965.0	27.12	246.72	931.52	-82.73	-198.11	214.69	2.96	2.96	-0.25	357.77
	NORMAL	1,061.0	31.13	246.28	1,015.37	-101.37	-240.94	261.40	4.18	4.18	-0.46	356.75
	NORMAL	1,156.0	32.54	247.10	1,096.08	-121.19	-286.97	311.50	1.55	1.48	0.86	17.40
	NORMAL	1,253.0	30.86	248.77	1,178.60	-140.35	-334.19	362.46	1.95	-1.73	1.72	153.13
5/5/2012	NORMAL	1,300.0	30.95	248.68	1,218.93	-149.11	-356.69	386.60	0.22	0.19	-0.19	332.78
	NORMAL	1,434.0	32.62	248.07	1,332.83	-175.13	-422.29	457.17	1.27	1.25	-0.46	348.85
	NORMAL	1,529.0	30.51	247.01	1,413.77	-194.11	-468.25	506.89	2.30	-2.22	-1.12	194.28
	NORMAL	1,625.0	30.86	245.96	1,496.33	-213.66	-513.17	555.87	0.67	0.36	-1.09	302.70
	NORMAL	1,720.0	31.20	244.02	1,577.74	-234.36	-557.54	604.79	1.11	0.36	-2.04	287.94
	NORMAL	1,816.0	30.43	246.13	1,660.19	-255.10	-602.13	653.92	1.38	-0.80	2.20	126.37
	NORMAL	1,912.0	29.72	246.24	1,743.26	-274.52	-646.14	702.02	0.74	-0.74	0.11	175.61
	NORMAL	2,007.0	30.51	247.72	1,825.44	-293.15	-690.01	749.68	1.14	0.83	1.56	43.87
	NORMAL	2,103.0	31.30	246.31	1,907.72	-312.33	-735.59	799.13	1.12	0.82	-1.47	316.88
5/6/2012	NORMAL	2,198.0	30.16	249.12	1,989.39	-330.76	-780.49	847.66	1.93	-1.20	2.96	129.65
	NORMAL	2,294.0	30.25	248.95	2,072.35	-348.04	-825.59	895.94	0.13	0.09	-0.18	316.39
	NORMAL	2,389.0	30.51	247.01	2,154.31	-366.05	-870.13	943.98	1.07	0.27	-2.04	284.00
	NORMAL	2,485.0	31.39	245.26	2,236.64	-386.03	-915.27	993.33	1.31	0.92	-1.82	313.60
	NORMAL	2,580.0	30.86	247.54	2,317.97	-405.70	-960.26	1,042.42	1.36	-0.56	2.40	115.19
	NORMAL	2,676.0	31.22	246.31	2,400.22	-425.10	-1,005.79	1,091.92	0.76	0.38	-1.28	299.05
	NORMAL	2,771.0	29.63	249.30	2,482.14	-443.29	-1,050.31	1,140.01	2.31	-1.67	3.15	137.68
	NORMAL	2,866.0	29.46	249.12	2,564.79	-459.92	-1,094.11	1,186.83	0.20	-0.18	-0.19	207.49
	NORMAL	2,961.0	29.81	248.95	2,647.36	-476.73	-1,137.97	1,233.79	0.38	0.37	-0.18	346.42
	NORMAL	3,056.0	30.34	248.07	2,729.57	-494.17	-1,182.27	1,281.39	0.73	0.56	-0.93	319.86
	NORMAL	3,151.0	30.07	247.54	2,811.68	-512.23	-1,226.52	1,329.18	0.40	-0.28	-0.56	224.41
	NORMAL	3,247.0	32.45	247.36	2,893.73	-531.33	-1,272.52	1,378.99	2.48	2.48	-0.19	357.68
	NORMAL	3,342.0	27.00	246.84	2,976.20	-549.64	-1,315.91	1,426.08	5.74	-5.74	-0.55	182.48
	NORMAL	3,437.0	26.03	246.13	3,061.21	-566.55	-1,354.80	1,468.48	1.07	-1.02	-0.75	197.78
	NORMAL	3,532.0	23.48	245.78	3,147.47	-582.76	-1,391.12	1,508.25	2.69	-2.68	-0.37	183.13
	NORMAL	3,628.0	22.51	244.20	3,235.84	-598.60	-1,425.11	1,545.71	1.20	-1.01	-1.65	211.74
	NORMAL	3,722.0	20.58	247.36	3,323.27	-612.79	-1,456.56	1,580.20	2.40	-2.05	3.36	150.44
	NORMAL	3,818.0	18.47	247.54	3,413.75	-625.10	-1,486.19	1,612.29	2.20	-2.20	0.19	178.45
	NORMAL	3,913.0	16.53	243.85	3,504.35	-636.81	-1,512.23	1,640.83	2.35	-2.04	-3.88	208.02
	NORMAL	4,008.0	15.56	249.65	3,595.65	-647.19	-1,536.31	1,667.05	1.97	-1.02	6.11	123.94
	NORMAL	4,104.0	13.72	248.42	3,688.53	-655.86	-1,558.97	1,691.30	1.94	-1.92	-1.28	189.00
	NORMAL	4,199.0	11.61	243.32	3,781.22	-664.30	-1,577.99	1,712.10	2.51	-2.22	-5.37	205.45
	NORMAL	4,294.0	8.97	238.75	3,874.68	-672.43	-1,592.87	1,728.96	2.91	-2.78	-4.81	194.94
	NORMAL	4,389.0	8.27	239.28	3,968.61	-679.77	-1,605.08	1,743.05	0.74	-0.74	0.56	173.79
	NORMAL	4,484.0	5.80	243.50	4,062.89	-685.40	-1,615.25	1,754.60	2.65	-2.60	4.44	170.27
	NORMAL	4,579.0	5.28	243.15	4,157.45	-689.51	-1,623.44	1,763.75	0.55	-0.55	-0.37	183.54
	NORMAL	4,674.0	4.92	243.67	4,252.07	-693.30	-1,630.99	1,772.17	0.38	-0.38	0.55	172.94
	NORMAL	4,767.0	4.31	246.31	4,344.77	-696.47	-1,637.77	1,779.64	0.69	-0.66	2.84	162.11
	NORMAL	4,863.0	4.13	250.09	4,440.51	-699.10	-1,644.32	1,786.70	0.35	-0.19	3.94	124.78
	NORMAL	4,957.0	1.93	233.13	4,534.37	-701.20	-1,648.77	1,791.62	2.50	-2.34	-18.04	193.85
	NORMAL	5,052.0	0.18	214.67	4,629.35	-702.28	-1,650.14	1,793.30	1.85	-1.84	-19.43	181.86
	NORMAL	5,148.0	0.26	12.17	4,725.35	-702.19	-1,650.18	1,793.30	0.45	0.08	164.06	166.68
	NORMAL	5,241.0	0.62	41.52	4,818.35	-701.61	-1,649.80	1,792.73	0.44	0.39	31.56	47.30
	NORMAL	5,335.0	0.79	56.29	4,912.34	-700.87	-1,648.92	1,791.63	0.26	0.18	15.71	54.45
	NORMAL	5,431.0	1.06	51.37	5,008.33	-699.95	-1,647.68	1,790.13	0.29	0.28	-5.13	341.14
	NORMAL	5,526.0	0.62	349.14	5,103.32	-698.89	-1,647.09	1,789.18	1.00	-0.46	-65.51	215.43
	NORMAL	5,621.0	0.79	353.71	5,198.31	-697.74	-1,647.26	1,788.89	0.19	0.18	4.81	20.60
	NORMAL	5,716.0	0.88	241.74	5,293.31	-697.43	-1,647.97	1,789.44	1.46	0.09	-117.86	216.10
	NORMAL	5,809.0	0.62	235.41	5,386.30	-698.06	-1,649.01	1,790.64	0.29	-0.28	-6.81	194.53

## 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 (°)
5/7/2012	NORMAL	5,903.0	0.44	220.29	5,480.30	-698.62	-1,649.67	1,791.46	0.24	-0.19	-16.09	210.45
	NORMAL	5,998.0	0.44	257.03	5,575.29	-698.98	-1,650.26	1,792.14	0.29	0.00	38.67	108.37
	NORMAL	6,094.0	0.62	294.47	5,671.29	-698.85	-1,651.09	1,792.86	0.40	0.19	39.00	82.10
5/8/2012	NORMAL	6,189.0	0.70	323.13	5,766.28	-698.17	-1,651.91	1,793.35	0.35	0.08	30.17	90.98
	NORMAL	6,284.0	0.62	350.90	5,861.28	-697.20	-1,652.34	1,793.38	0.34	-0.08	29.23	117.66
	NORMAL	6,379.0	0.62	6.72	5,956.27	-696.18	-1,652.36	1,793.01	0.18	0.00	16.65	97.91
	NORMAL	6,474.0	0.62	349.49	6,051.27	-695.16	-1,652.39	1,792.65	0.20	0.00	-18.14	261.39
	NORMAL	6,570.0	0.18	109.55	6,147.26	-694.70	-1,652.34	1,792.43	0.76	-0.46	125.06	167.63
	NORMAL	6,665.0	1.49	151.74	6,242.25	-695.84	-1,651.62	1,792.19	1.43	1.38	44.41	47.28
	NORMAL	6,761.0	1.58	136.97	6,338.22	-697.91	-1,650.12	1,791.61	0.42	0.09	-15.39	275.36
	NORMAL	6,856.0	1.58	120.10	6,433.18	-699.52	-1,648.10	1,790.35	0.49	0.00	-17.76	261.57
	NORMAL	6,951.0	1.41	107.27	6,528.15	-700.53	-1,645.85	1,788.66	0.39	-0.18	-13.51	236.76
5/9/2012	NORMAL	7,046.0	1.32	90.04	6,623.12	-700.87	-1,643.64	1,786.75	0.44	-0.09	-18.14	249.11
	NORMAL	7,141.0	1.14	64.38	6,718.10	-700.47	-1,641.69	1,784.80	0.60	-0.19	-27.01	239.36
	NORMAL	7,236.0	1.41	61.04	6,813.08	-699.49	-1,639.82	1,782.69	0.29	0.28	-3.52	342.94
	NORMAL	7,331.0	1.85	58.05	6,908.04	-698.11	-1,637.49	1,780.02	0.47	0.46	-3.15	347.56
	NORMAL	7,426.0	2.11	49.44	7,002.98	-696.17	-1,634.86	1,776.84	0.42	0.27	-9.06	306.80
	NORMAL	7,521.0	2.37	29.92	7,097.91	-693.33	-1,632.55	1,773.62	0.84	0.27	-20.55	278.90
	NORMAL	7,616.0	2.46	19.38	7,192.83	-689.70	-1,630.90	1,770.70	0.48	0.09	-11.09	276.16
	NORMAL	7,711.0	2.73	17.97	7,287.73	-685.63	-1,629.52	1,767.87	0.29	0.28	-1.48	345.99
	NORMAL	7,806.0	3.25	24.12	7,382.60	-681.02	-1,627.72	1,764.44	0.64	0.55	6.47	34.77
	NORMAL	7,847.0	3.61	30.45	7,423.53	-678.84	-1,626.60	1,762.56	1.27	0.88	15.44	49.64
	NORMAL	7,863.0	3.61	30.45	7,439.50	-677.97	-1,626.08	1,761.76	0.00	0.00	0.00	0.00

### 3 Charts

#### 3.1 Vertical Section View



### 3.2 Plan View

