

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	KP 511-27	Wellbore No.	1
Well Name	KP 511-27	Common Name	KP 511-27
Project	KP 28-06S-091W	Site	KP 41-28 Pad
Vertical Section Azimuth	124.69 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	11/23/2011	UWI	KP 511-27
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	11/23/2011	Ended	
Tool Name	MWD	Engineer	

#### 2.1.1 Tie On Point

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)
		345.15			

#### 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 (°)
10/23/2011	NORMAL	70.0	0.09	345.15	70.00	0.05	-0.01	-0.04	0.13	0.13	0.00	345.15
	NORMAL	162.0	1.76	124.28	161.99	-0.67	1.13	1.32	1.99	1.82	151.23	140.97
	NORMAL	254.0	3.26	122.61	253.90	-2.88	4.51	5.34	0.00	0.00	0.00	0.00
	NORMAL	344.0	5.63	125.68	343.62	-6.83	10.25	12.32	2.65	2.63	3.41	7.27
	NORMAL	435.0	9.41	128.67	433.82	-14.09	19.69	24.20	4.17	4.15	3.29	7.40
11/23/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/23/2011	NORMAL	70.0	0.09	345.15	70.00	0.05	-0.01	-0.04	0.13	0.13	0.00	345.15
	NORMAL	162.0	1.76	124.28	161.99	-0.67	1.13	1.32	1.99	1.82	151.23	140.97
	NORMAL	254.0	3.26	122.61	253.90	-2.88	4.51	5.34	1.63	1.63	-1.82	356.37
	NORMAL	344.0	5.63	125.68	343.62	-6.83	10.25	12.32	2.65	2.63	3.41	7.27
	NORMAL	435.0	9.41	128.67	433.82	-14.09	19.69	24.20	4.17	4.15	3.29	7.40
11/24/2011	NORMAL	526.0	12.67	125.07	523.12	-24.47	33.67	41.61	3.66	3.58	-3.96	346.29
	NORMAL	601.0	15.04	125.67	595.94	-34.87	48.31	59.57	3.17	3.16	0.80	3.76
	NORMAL	692.0	17.85	125.40	683.21	-49.84	69.27	85.32	3.09	3.09	-0.30	358.31
	NORMAL	783.0	19.35	124.26	769.45	-66.41	93.10	114.35	1.70	1.65	-1.25	345.83
	NORMAL	875.0	20.75	123.64	855.87	-84.02	119.27	145.88	1.54	1.52	-0.67	351.08
	NORMAL	966.0	18.99	123.73	941.45	-101.17	145.00	176.81	1.93	-1.93	0.10	179.05
	NORMAL	1,060.0	19.23	123.32	1,030.27	-118.17	170.66	207.57	0.29	0.26	-0.44	330.59
	NORMAL	1,152.0	20.14	122.41	1,116.89	-134.98	196.69	238.55	1.04	0.99	-0.99	340.95
	NORMAL	1,247.0	19.97	124.78	1,206.14	-153.00	223.82	271.11	0.87	-0.18	2.49	102.93
	NORMAL	1,346.0	19.79	126.72	1,299.24	-172.66	251.14	304.77	0.69	-0.18	1.96	106.17

## 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)	Bulld Rate (°/100ft)	Turn (°/100ft)	TFace (°)
11/25/2011	NORMAL	1,439.0	20.22	125.36	1,386.63	-191.38	276.87	336.57	0.68	0.46	-1.46	312.10
	NORMAL	1,533.0	20.22	125.40	1,474.83	-210.19	303.36	369.06	0.01	0.00	0.04	90.02
	NORMAL	1,627.0	19.72	125.81	1,563.18	-228.88	329.46	401.16	0.55	-0.53	0.44	164.55
	NORMAL	1,721.0	20.40	124.08	1,651.48	-247.34	355.89	433.40	0.96	0.72	-1.84	318.08
	NORMAL	1,816.0	20.22	123.38	1,740.57	-265.65	383.31	466.37	0.32	-0.19	-0.74	233.14
	NORMAL	1,910.0	19.52	125.58	1,828.98	-283.72	409.65	498.31	1.09	-0.74	2.34	134.14
	NORMAL	2,005.0	19.81	124.25	1,918.44	-302.02	435.87	530.28	0.56	0.31	-1.40	302.31
	NORMAL	2,100.0	20.22	124.61	2,007.70	-320.40	462.68	562.79	0.45	0.43	0.38	16.90
	NORMAL	2,194.0	19.96	124.27	2,095.98	-338.66	489.31	595.08	0.30	-0.28	-0.36	204.03
	NORMAL	2,288.0	20.10	123.75	2,184.29	-356.67	516.00	627.27	0.24	0.15	-0.55	307.92
	NORMAL	2,381.0	19.63	123.79	2,271.76	-374.24	542.27	658.87	0.51	-0.51	0.04	178.36
	NORMAL	2,475.0	18.55	122.85	2,360.59	-391.13	567.96	689.60	1.19	-1.15	-1.00	195.45
	NORMAL	2,570.0	18.35	122.24	2,450.71	-407.30	593.30	719.65	0.29	-0.21	-0.64	223.70
	NORMAL	2,664.0	18.48	126.37	2,539.90	-424.03	617.81	749.32	1.39	0.14	4.39	86.27
	NORMAL	2,758.0	18.44	125.77	2,629.06	-441.56	641.87	779.08	0.21	-0.04	-0.64	257.83
	NORMAL	2,853.0	18.55	126.90	2,719.15	-459.41	666.14	809.20	0.39	0.12	1.19	73.48
	NORMAL	2,948.0	19.51	125.31	2,808.96	-477.66	691.17	840.16	1.15	1.01	-1.67	330.88
	NORMAL	3,042.0	19.61	126.55	2,897.54	-496.12	716.66	871.63	0.45	0.11	1.32	77.04
	NORMAL	3,136.0	19.36	126.15	2,986.15	-514.71	741.91	902.97	0.30	-0.27	-0.43	207.90
11/26/2011	NORMAL	3,230.0	19.74	126.32	3,074.73	-533.30	767.28	934.41	0.41	0.40	0.18	8.59
	NORMAL	3,324.0	19.70	126.72	3,163.22	-552.18	792.77	966.11	0.15	-0.04	0.43	106.70
	NORMAL	3,418.0	19.52	125.14	3,251.77	-570.69	818.31	997.65	0.60	-0.19	-1.68	250.51
	NORMAL	3,514.0	19.38	124.18	3,342.29	-588.87	844.60	1,029.62	0.36	-0.15	-1.00	245.90
	NORMAL	3,608.0	18.91	124.44	3,431.09	-606.24	870.07	1,060.44	0.51	-0.50	0.28	169.84
	NORMAL	3,702.0	18.59	123.83	3,520.10	-623.20	895.08	1,090.66	0.40	-0.34	-0.65	211.21
	NORMAL	3,796.0	17.83	124.51	3,609.39	-639.69	919.38	1,120.03	0.84	-0.81	0.72	164.70
	NORMAL	3,890.0	16.88	124.49	3,699.11	-655.58	942.49	1,148.07	1.01	-1.01	-0.02	180.35
	NORMAL	3,984.0	16.80	123.12	3,789.08	-670.73	965.12	1,175.30	0.43	-0.09	-1.46	257.95
	NORMAL	4,078.0	16.92	121.73	3,879.04	-685.34	988.13	1,202.54	0.45	0.13	-1.48	285.91
	NORMAL	4,172.0	15.48	122.50	3,969.31	-699.28	1,010.34	1,228.73	1.55	-1.53	0.82	171.88
	NORMAL	4,266.0	14.91	125.72	4,060.02	-713.08	1,030.74	1,253.36	1.08	-0.61	3.43	125.58
	NORMAL	4,360.0	13.10	123.77	4,151.23	-726.06	1,049.42	1,276.10	1.99	-1.93	-2.07	193.67
	NORMAL	4,453.0	12.43	121.37	4,241.93	-737.13	1,066.72	1,296.63	0.92	-0.72	-2.58	217.19
	NORMAL	4,548.0	11.43	122.77	4,334.87	-747.55	1,083.37	1,316.25	1.10	-1.05	1.47	164.54
	NORMAL	4,642.0	9.76	125.71	4,427.27	-757.24	1,097.67	1,333.53	1.87	-1.78	3.13	163.50
	NORMAL	4,736.0	9.23	126.19	4,519.98	-766.34	1,110.23	1,349.03	0.57	-0.56	0.51	171.74
	NORMAL	4,829.0	8.71	123.29	4,611.84	-774.61	1,122.13	1,363.52	0.74	-0.56	-3.12	219.58
11/27/2011	NORMAL	4,923.0	7.35	128.62	4,704.92	-782.27	1,132.78	1,376.64	1.65	-1.45	5.67	153.92
	NORMAL	5,018.0	5.93	133.34	4,799.28	-789.43	1,141.10	1,387.55	1.60	-1.49	4.97	161.31
	NORMAL	5,113.0	4.40	136.21	4,893.89	-795.43	1,147.19	1,395.98	1.63	-1.61	3.02	171.84
	NORMAL	5,208.0	4.03	137.63	4,988.64	-800.53	1,151.96	1,402.80	0.40	-0.39	1.49	164.95
	NORMAL	5,302.0	2.46	127.07	5,082.48	-804.19	1,155.79	1,408.04	1.78	-1.67	-11.23	195.63
	NORMAL	5,397.0	2.22	122.67	5,177.41	-806.41	1,158.97	1,411.91	0.32	-0.25	-4.63	214.63
	NORMAL	5,493.0	2.37	129.25	5,273.33	-808.67	1,162.07	1,415.75	0.32	0.16	6.85	63.66
	NORMAL	5,588.0	2.02	129.36	5,368.26	-810.97	1,164.89	1,419.38	0.37	-0.37	0.12	179.37
	NORMAL	5,683.0	2.15	131.22	5,463.20	-813.21	1,167.52	1,422.81	0.15	0.14	1.96	28.43
	NORMAL	5,777.0	1.82	130.21	5,557.14	-815.33	1,169.99	1,426.05	0.35	-0.35	-1.07	185.55
	NORMAL	5,873.0	1.21	134.93	5,653.11	-817.03	1,171.87	1,428.57	0.65	-0.64	4.92	170.79
	NORMAL	5,968.0	1.35	137.42	5,748.08	-818.57	1,173.34	1,430.65	0.16	0.15	2.62	22.92
11/28/2011	NORMAL	6,061.0	1.14	133.58	5,841.06	-820.01	1,174.75	1,432.63	0.24	-0.23	-4.13	199.76
	NORMAL	6,156.0	0.60	137.84	5,936.05	-821.03	1,175.77	1,434.05	0.57	-0.57	4.48	175.30
	NORMAL	6,250.0	0.48	155.53	6,030.04	-821.75	1,176.26	1,434.86	0.22	-0.13	18.82	134.37
	NORMAL	6,343.0	0.30	137.77	6,123.04	-822.29	1,176.59	1,435.44	0.23	-0.19	-19.10	205.22
	NORMAL	6,438.0	0.97	78.93	6,218.04	-822.32	1,177.54	1,436.24	0.90	0.71	-61.94	283.67
	NORMAL	6,533.0	0.95	75.80	6,313.02	-821.97	1,179.10	1,437.32	0.06	-0.02	-3.29	247.56
	NORMAL	6,628.0	0.45	104.29	6,408.02	-821.87	1,180.22	1,438.18	0.63	-0.53	29.99	158.84
	NORMAL	6,723.0	0.21	292.88	6,503.02	-821.89	1,180.42	1,438.36	0.69	-0.25	-180.43	182.73

## 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 (°)
11/29/2011	NORMAL	6,817.0	0.15	211.68	6,597.01	-821.93	1,180.20	1,438.20	0.25	-0.06	-86.38	218.40
	NORMAL	6,912.0	0.33	168.17	6,692.01	-822.31	1,180.19	1,438.41	0.26	0.19	-45.80	291.46
	NORMAL	7,006.0	0.54	154.39	6,786.01	-822.97	1,180.44	1,438.99	0.25	0.22	-14.66	326.52
	NORMAL	7,102.0	0.18	38.21	6,882.01	-823.26	1,180.73	1,439.39	0.67	-0.38	-121.02	194.62
	NORMAL	7,197.0	0.74	52.38	6,977.01	-822.77	1,181.30	1,439.59	0.60	0.59	14.92	18.63
	NORMAL	7,292.0	0.88	86.99	7,072.00	-822.35	1,182.52	1,440.35	0.53	0.15	36.43	91.80
	NORMAL	7,387.0	0.26	110.46	7,166.99	-822.39	1,183.45	1,441.14	0.68	-0.65	24.71	170.83
	NORMAL	7,480.0	0.34	154.77	7,259.99	-822.72	1,183.76	1,441.58	0.26	0.09	47.65	94.02
	NORMAL	7,575.0	0.35	160.47	7,354.99	-823.24	1,183.98	1,442.06	0.04	0.01	6.00	76.62
	NORMAL	7,668.0	0.14	168.10	7,447.99	-823.62	1,184.10	1,442.37	0.23	-0.23	8.20	174.97
	NORMAL	7,763.0	0.34	162.56	7,542.99	-824.01	1,184.21	1,442.68	0.21	0.21	-5.83	350.61
	NORMAL	7,858.0	0.18	138.41	7,637.99	-824.39	1,184.39	1,443.05	0.20	-0.17	-25.42	202.73
	NORMAL	7,954.0	0.14	163.36	7,733.99	-824.61	1,184.53	1,443.28	0.08	-0.04	25.99	131.94
11/30/2011	NORMAL	8,050.0	0.07	87.65	7,829.99	-824.72	1,184.62	1,443.42	0.15	-0.07	-78.86	208.93
	NORMAL	8,144.0	0.21	230.01	7,923.99	-824.83	1,184.54	1,443.42	0.29	0.15	151.45	151.51
	NORMAL	8,238.0	0.79	198.48	8,017.98	-825.55	1,184.21	1,443.56	0.66	0.62	-33.54	318.28
	NORMAL	8,333.0	1.14	219.97	8,112.97	-826.90	1,183.39	1,443.65	0.52	0.37	22.62	57.04
	NORMAL	8,428.0	1.13	252.33	8,207.95	-827.91	1,181.89	1,442.99	0.67	-0.01	34.06	107.05
	NORMAL	8,500.0	1.14	258.75	8,279.94	-828.26	1,180.51	1,442.06	0.18	0.01	8.92	88.72
	NORMAL	8,560.0	1.14	258.75	8,339.93	-828.50	1,179.34	1,441.23	0.00	0.00	0.00	0.00