

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 311-11	Wellbore No.	1
Well Name	PA 311-11	Common Name	PA 311-11
Project	PA 11-07S-095W	Site	PA 22-11 Pad
Vertical Section Azimuth	323.57 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	4/9/2013	UWI	PA 311-11
Active Datum	KB @6,295.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	4/9/2013	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 (°)
4/9/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/9/2013	NORMAL	75.0	0.44	31.20	75.00	0.25	0.15	0.11	0.59	0.59	0.00	31.20
	NORMAL	166.0	3.26	328.10	165.95	2.74	-1.04	2.82	3.39	3.10	-69.34	289.60
	NORMAL	257.0	5.98	317.90	256.64	8.46	-5.58	10.12	3.11	2.99	-11.21	338.06
	NORMAL	347.0	8.71	320.10	345.90	17.17	-13.10	21.59	3.05	3.03	2.44	6.97
	NORMAL	438.0	11.09	324.23	435.54	29.55	-22.64	37.22	2.73	2.62	4.54	18.65
	NORMAL	528.0	13.72	323.96	523.43	45.21	-33.98	56.55	2.92	2.92	-0.30	358.60
	NORMAL	619.0	16.98	323.88	611.17	64.68	-48.16	80.64	3.58	3.58	-0.09	359.59
	NORMAL	709.0	20.67	323.79	696.34	88.12	-65.30	109.67	4.10	4.10	-0.10	359.51
	NORMAL	782.0	23.07	324.56	764.08	110.17	-81.21	136.86	3.31	3.29	1.05	7.17
	NORMAL	874.0	26.20	322.79	847.70	141.04	-103.95	175.20	3.50	3.40	-1.92	345.93
	NORMAL	965.0	29.93	322.97	927.98	175.17	-129.78	218.00	4.10	4.10	0.20	1.38
	NORMAL	1,058.0	31.75	323.18	1,007.83	213.28	-158.41	265.68	1.96	1.96	0.23	3.48
	NORMAL	1,110.0	31.42	323.44	1,052.13	235.12	-174.69	292.91	0.69	-0.63	0.50	157.69
4/10/2013	NORMAL	874.0	26.20	322.79	847.70	141.04	-103.95	175.20	3.50	3.40	-1.92	345.93
	NORMAL	965.0	29.93	322.97	927.98	175.17	-129.78	218.00	4.10	4.10	0.20	1.38
	NORMAL	1,058.0	31.75	322.97	1,007.83	213.23	-158.49	265.68	1.96	1.96	0.00	0.00
	NORMAL	1,110.0	31.42	323.44	1,052.13	235.04	-174.80	292.91	0.79	-0.63	0.90	143.48
4/11/2013	NORMAL	1,211.0	30.95	324.57	1,138.53	277.35	-205.54	345.21	0.74	-0.47	1.12	129.26
	NORMAL	1,242.0	31.18	324.25	1,165.09	290.36	-214.85	361.20	0.91	0.74	-1.03	324.19
	NORMAL	1,337.0	31.39	323.69	1,246.27	330.25	-243.87	410.53	0.38	0.22	-0.59	305.59

2.1.2 Survey Stations (Continued)

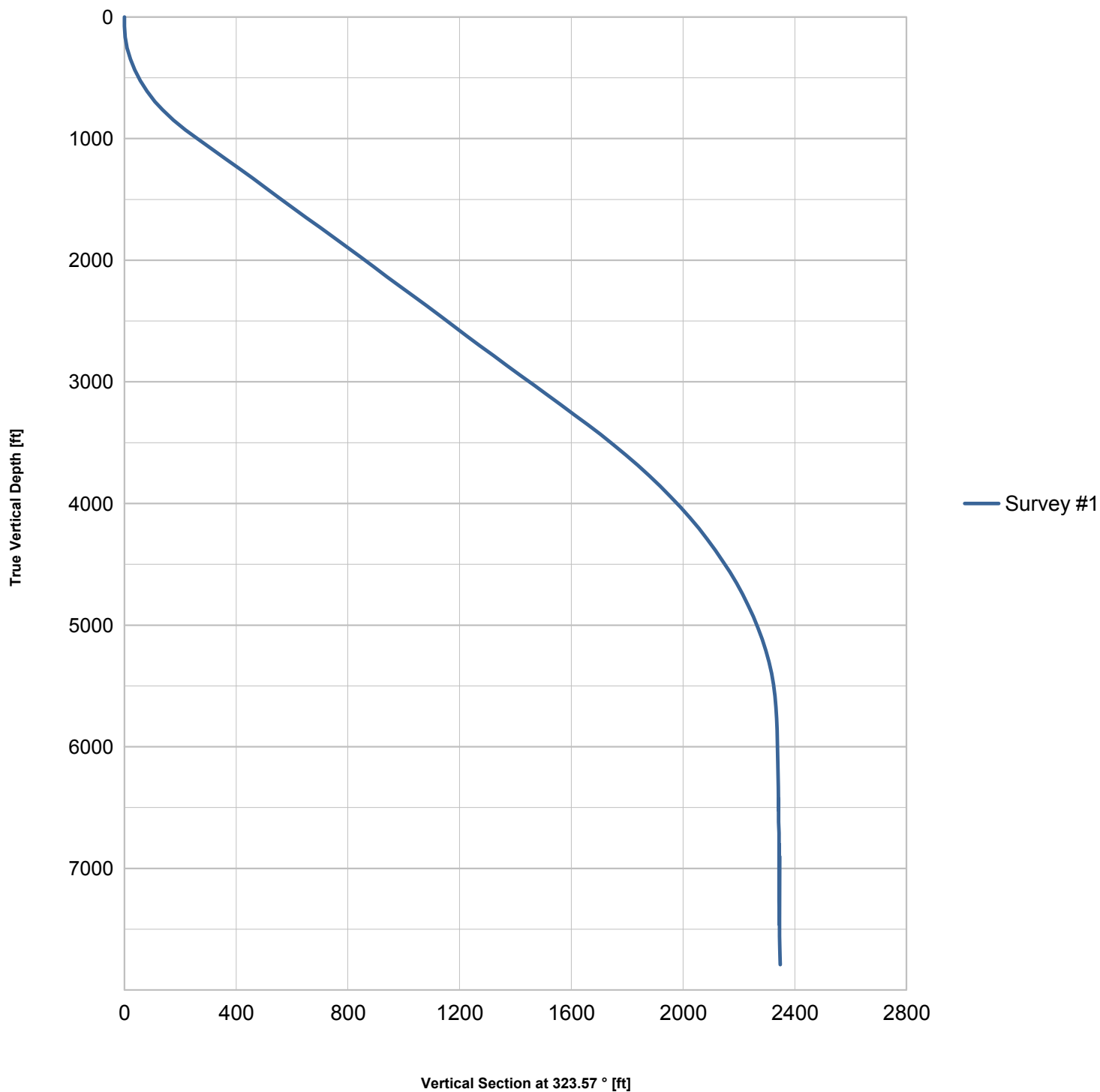
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
4/11/2013	NORMAL	1,431.0	30.97	322.70	1,326.70	369.22	-273.02	459.19	0.70	-0.45	-1.05	230.25
	NORMAL	1,526.0	30.09	322.65	1,408.53	407.59	-302.28	507.45	0.93	-0.93	-0.05	181.63
	NORMAL	1,620.0	30.25	324.75	1,489.79	445.66	-330.24	554.68	1.14	0.17	2.23	82.29
	NORMAL	1,714.0	31.30	325.19	1,570.56	485.05	-357.85	602.76	1.14	1.12	0.47	12.29
	NORMAL	1,807.0	31.66	325.19	1,649.87	524.92	-385.57	651.31	0.39	0.39	0.00	0.00
	NORMAL	1,902.0	31.17	322.49	1,730.95	564.90	-414.77	700.81	1.57	-0.52	-2.84	249.65
	NORMAL	1,996.0	31.13	321.25	1,811.39	603.14	-444.79	749.41	0.68	-0.04	-1.32	265.90
	NORMAL	2,090.0	30.47	322.16	1,892.14	640.91	-474.62	797.52	0.86	-0.70	0.97	145.17
	NORMAL	2,184.0	30.25	321.34	1,973.25	678.22	-504.04	845.00	0.50	-0.23	-0.87	241.69
	NORMAL	2,278.0	30.11	322.38	2,054.51	715.39	-533.22	892.24	0.58	-0.15	1.11	105.44
	NORMAL	2,372.0	30.36	324.19	2,135.72	753.33	-561.51	939.57	1.01	0.27	1.93	75.44
	NORMAL	2,466.0	31.18	325.55	2,216.49	792.66	-589.18	987.64	1.14	0.87	1.45	40.90
	NORMAL	2,558.0	30.85	325.71	2,295.33	831.79	-615.94	1,035.01	0.37	-0.36	0.17	166.04
	NORMAL	2,652.0	30.49	325.00	2,376.19	871.24	-643.20	1,082.94	0.54	-0.38	-0.76	224.87
	NORMAL	2,747.0	30.25	324.13	2,458.15	910.37	-671.04	1,130.96	0.53	-0.25	-0.92	241.01
	NORMAL	2,841.0	29.39	324.10	2,539.70	948.24	-698.44	1,177.70	0.92	-0.91	-0.03	180.98
	NORMAL	2,936.0	30.27	325.74	2,622.12	986.92	-725.59	1,224.94	1.26	0.93	1.73	43.54
	NORMAL	3,029.0	31.21	326.34	2,702.05	1,026.34	-752.14	1,272.43	1.06	1.01	0.65	18.33
	NORMAL	3,124.0	30.78	325.54	2,783.48	1,066.87	-779.54	1,321.31	0.63	-0.45	-0.84	223.43
4/12/2013	NORMAL	3,124.0	30.78	325.54	2,783.48	1,066.87	-779.54	1,321.31	0.00	0.00	0.00	0.00
	NORMAL	3,218.0	30.25	325.54	2,864.46	1,106.23	-806.54	1,369.01	0.56	-0.56	0.00	180.00
	NORMAL	3,312.0	31.10	324.67	2,945.31	1,145.56	-833.98	1,416.95	1.02	0.90	-0.93	332.05
	NORMAL	3,405.0	30.88	324.52	3,025.04	1,184.59	-861.72	1,464.82	0.25	-0.24	-0.16	199.28
	NORMAL	3,501.0	31.07	323.38	3,107.35	1,224.53	-890.80	1,514.23	0.64	0.20	-1.19	287.45
	NORMAL	3,595.0	30.59	322.46	3,188.06	1,262.96	-919.84	1,562.40	0.72	-0.51	-0.98	224.09
	NORMAL	3,690.0	30.47	322.64	3,269.89	1,301.28	-949.19	1,610.65	0.16	-0.13	0.19	142.77
	NORMAL	3,784.0	30.08	323.17	3,351.07	1,339.08	-977.77	1,658.04	0.50	-0.41	0.56	145.81
	NORMAL	3,878.0	29.45	322.74	3,432.67	1,376.32	-1,005.88	1,704.70	0.71	-0.67	-0.46	198.53
	NORMAL	3,973.0	28.32	322.43	3,515.85	1,412.77	-1,033.76	1,750.58	1.20	-1.19	-0.33	187.41
	NORMAL	4,069.0	27.11	322.64	3,600.84	1,448.21	-1,060.92	1,795.22	1.26	-1.26	0.22	175.48
	NORMAL	4,163.0	26.68	322.67	3,684.67	1,482.01	-1,086.71	1,837.74	0.46	-0.46	0.03	178.21
	NORMAL	4,257.0	24.71	324.40	3,769.37	1,514.77	-1,110.95	1,878.49	2.24	-2.10	1.84	159.93
	NORMAL	4,352.0	23.97	324.52	3,855.93	1,546.63	-1,133.71	1,917.64	0.78	-0.78	0.13	176.23
	NORMAL	4,446.0	22.48	323.13	3,942.31	1,576.56	-1,155.58	1,954.70	1.69	-1.59	-1.48	199.56
	NORMAL	4,541.0	21.90	322.11	4,030.27	1,605.07	-1,177.35	1,990.57	0.73	-0.61	-1.07	213.12
	NORMAL	4,634.0	20.66	323.25	4,116.93	1,631.90	-1,197.82	2,024.32	1.41	-1.33	1.23	162.08
	NORMAL	4,728.0	19.70	322.63	4,205.16	1,657.78	-1,217.36	2,056.74	1.05	-1.02	-0.66	192.27
	NORMAL	4,822.0	18.26	323.44	4,294.04	1,682.21	-1,235.75	2,087.31	1.56	-1.53	0.86	170.02
	NORMAL	4,916.0	16.88	322.73	4,383.66	1,704.90	-1,252.79	2,115.69	1.49	-1.47	-0.76	188.49
	NORMAL	5,010.0	15.92	322.29	4,473.83	1,725.96	-1,268.94	2,142.22	1.03	-1.02	-0.47	187.16
	NORMAL	5,103.0	15.85	323.95	4,563.28	1,746.31	-1,284.21	2,167.67	0.49	-0.08	1.78	99.56
	NORMAL	5,197.0	13.87	323.39	4,654.13	1,765.74	-1,298.49	2,191.78	2.11	-2.11	-0.60	183.88
	NORMAL	5,291.0	12.74	322.47	4,745.61	1,783.00	-1,311.52	2,213.41	1.22	-1.20	-0.98	190.16
	NORMAL	5,385.0	11.58	322.40	4,837.50	1,798.70	-1,323.59	2,233.21	1.23	-1.23	-0.07	180.69
4/13/2013	NORMAL	5,480.0	10.90	326.33	4,930.68	1,813.73	-1,334.39	2,251.71	1.08	-0.72	4.14	133.51
	NORMAL	5,574.0	9.55	326.40	5,023.18	1,827.62	-1,343.63	2,268.38	1.44	-1.44	0.07	179.51
	NORMAL	5,668.0	8.53	324.05	5,116.01	1,839.76	-1,352.04	2,283.14	1.15	-1.09	-2.50	198.74
	NORMAL	5,763.0	7.73	322.03	5,210.06	1,850.50	-1,360.11	2,296.57	0.89	-0.84	-2.13	198.65
	NORMAL	5,856.0	6.18	325.82	5,302.37	1,859.57	-1,366.77	2,307.82	1.74	-1.67	4.08	165.38
	NORMAL	5,950.0	5.28	326.24	5,395.90	1,867.35	-1,372.02	2,317.20	0.96	-0.96	0.45	177.54
	NORMAL	6,043.0	3.17	321.85	5,488.64	1,872.93	-1,375.98	2,324.05	2.29	-2.27	-4.72	186.53
	NORMAL	6,137.0	2.97	326.24	5,582.51	1,877.00	-1,378.94	2,329.08	0.33	-0.21	4.67	132.56
	NORMAL	6,230.0	1.56	344.48	5,675.43	1,880.23	-1,380.62	2,332.66	1.68	-1.52	19.61	161.84
	NORMAL	6,324.0	1.09	340.44	5,769.41	1,882.30	-1,381.26	2,334.72	0.51	-0.50	-4.30	189.23
	NORMAL	6,418.0	1.14	300.84	5,863.39	1,883.62	-1,382.36	2,336.43	0.81	0.05	-42.13	253.77
4/14/2013	NORMAL	6,512.0	0.70	15.99	5,957.38	1,884.65	-1,383.01	2,337.65	1.25	-0.47	79.95	144.84
	NORMAL	6,605.0	0.82	19.55	6,050.37	1,885.83	-1,382.63	2,338.37	0.14	0.13	3.83	23.27

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 (°)
4/14/2013	NORMAL	6,699.0	0.70	7.35	6,144.37	1,887.03	-1,382.33	2,339.16	0.21	-0.13	-12.98	227.45
	NORMAL	6,794.0	0.84	322.01	6,239.36	1,888.15	-1,382.69	2,340.27	0.64	0.15	-47.73	259.61
	NORMAL	6,888.0	0.89	11.42	6,333.35	1,889.41	-1,382.97	2,341.45	0.77	0.05	52.56	111.11
	NORMAL	6,982.0	0.59	43.78	6,427.34	1,890.48	-1,382.49	2,342.02	0.54	-0.32	34.43	141.12
	NORMAL	7,077.0	0.24	158.51	6,522.34	1,890.65	-1,382.07	2,341.91	0.76	-0.37	120.77	162.48
	NORMAL	7,171.0	0.78	354.06	6,616.34	1,891.10	-1,382.07	2,342.27	1.08	0.57	-174.95	191.91
	NORMAL	7,265.0	0.56	330.23	6,710.33	1,892.13	-1,382.36	2,343.28	0.37	-0.23	-25.35	220.20
	NORMAL	7,359.0	0.97	289.33	6,804.32	1,892.80	-1,383.34	2,344.40	0.70	0.44	-43.51	285.25
	NORMAL	7,453.0	0.26	213.92	6,898.32	1,892.88	-1,384.21	2,344.98	1.00	-0.76	-80.22	195.55
	NORMAL	7,547.0	0.35	195.64	6,992.32	1,892.43	-1,384.41	2,344.73	0.14	0.10	-19.45	303.38
	NORMAL	7,642.0	0.80	241.84	7,087.31	1,891.84	-1,385.07	2,344.65	0.64	0.47	48.63	70.57
	NORMAL	7,736.0	1.36	212.82	7,181.29	1,890.59	-1,386.25	2,344.35	0.81	0.60	-30.87	300.54
	NORMAL	7,829.0	0.21	205.21	7,274.28	1,889.60	-1,387.02	2,344.01	0.00	0.00	0.00	0.00
	NORMAL	7,829.0	0.21	205.21	7,274.28	1,889.60	-1,387.02	2,343.88	0.00	0.00	0.00	0.00
4/15/2013	NORMAL	7,924.0	0.35	332.39	7,369.28	1,889.70	-1,387.23	2,344.21	0.53	0.15	133.87	146.51
	NORMAL	8,016.0	0.52	5.31	7,461.28	1,890.36	-1,387.32	2,344.80	0.32	0.18	35.78	72.98
	NORMAL	8,110.0	0.35	305.24	7,555.28	1,890.95	-1,387.52	2,345.39	0.49	-0.18	-63.90	221.29
	NORMAL	8,203.0	0.80	303.77	7,648.27	1,891.48	-1,388.29	2,346.27	0.48	0.48	-1.58	357.39
	NORMAL	8,280.0	0.70	337.05	7,725.27	1,892.21	-1,388.92	2,347.24	0.57	-0.13	43.22	119.21
	NORMAL	8,345.0	0.70	337.05	7,790.26	1,892.94	-1,389.23	2,348.01	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

