

Deviation Summary

PICEANCE HL

1 General

1.1 Customer Information

Company	PICEANCE HL
Representative	
Address	

1.2 Well/Wellbore Information

Well	AP 423-17-695	Wellbore No.	00
Wellbore Legal Name	AP 423-17-695	Common Wellbore Name	AP 423-17-695
Project	AP 20-06S-095W	Site	AP 21-20-695 Pad
Vertical Section Azimuth	351.78 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	9/26/2014	UWI	AP 423-17-695
Active datum	KB @6,935.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	9/26/2014	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 (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
9/26/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/26/2014	NORMAL	105.0	1.23	271.32	104.99	0.03	-1.13	0.19	1.17	1.17	0.00	271.32
	NORMAL	135.0	1.32	304.10	134.99	0.23	-1.73	0.47	2.42	0.30	109.27	99.54
	NORMAL	166.0	1.67	323.96	165.97	0.79	-2.30	1.11	2.00	1.13	64.06	66.16
	NORMAL	196.0	2.29	342.30	195.96	1.72	-2.74	2.09	2.93	2.07	61.13	55.04
	NORMAL	226.0	3.08	0.88	225.92	3.09	-2.91	3.48	3.89	2.63	61.93	57.30
	NORMAL	256.0	4.13	356.22	255.86	4.98	-2.96	5.35	3.63	3.50	-15.53	342.07
	NORMAL	286.0	4.93	357.36	285.77	7.34	-3.09	7.71	2.68	2.67	3.80	6.99
	NORMAL	317.0	5.89	358.42	316.63	10.26	-3.20	10.62	3.11	3.10	3.42	6.47
	NORMAL	347.0	7.65	359.82	346.42	13.80	-3.25	14.12	5.89	5.87	4.67	6.05
	NORMAL	377.0	8.80	358.42	376.11	18.09	-3.32	18.38	3.89	3.83	-4.67	349.43
	NORMAL	407.0	10.21	358.95	405.70	23.04	-3.43	23.30	4.71	4.70	1.77	3.81
	NORMAL	437.0	11.96	354.99	435.14	28.80	-3.75	29.04	6.36	5.83	-13.20	334.54
	NORMAL	468.0	13.20	355.43	465.40	35.53	-4.31	35.78	4.01	4.00	1.42	4.63
	NORMAL	498.0	13.02	351.74	494.61	42.29	-5.07	42.58	2.85	-0.60	-12.30	256.07
	NORMAL	528.0	13.64	351.12	523.81	49.13	-6.10	49.49	2.12	2.07	-2.07	346.71
	NORMAL	559.0	14.43	350.07	553.88	56.54	-7.33	57.01	2.68	2.55	-3.39	341.62
	NORMAL	589.0	16.10	350.68	582.82	64.33	-8.65	64.91	5.59	5.57	2.03	5.79
	NORMAL	619.0	16.72	351.39	611.60	72.70	-9.97	73.38	2.17	2.07	2.37	18.27
9/27/2014	NORMAL	693.0	17.06	351.49	682.41	93.96	-13.17	94.88	0.46	0.46	0.14	4.93
	NORMAL	785.0	17.50	349.91	770.26	120.93	-17.59	122.20	0.70	0.48	-1.72	312.40

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
9/27/2014	NORMAL	876.0	17.45	352.37	857.06	147.92	-21.80	149.52	0.81	-0.05	2.70	95.04
	NORMAL	966.0	17.93	351.49	942.80	175.00	-25.64	176.86	0.61	0.53	-0.98	330.46
	NORMAL	1,062.0	17.54	350.97	1,034.24	203.90	-30.10	206.11	0.44	-0.41	-0.54	201.86
	NORMAL	1,158.0	18.20	350.53	1,125.61	232.97	-34.84	235.56	0.70	0.69	-0.46	348.23
	NORMAL	1,253.0	18.02	351.93	1,215.90	262.15	-39.34	265.09	0.50	-0.19	1.47	113.14
	NORMAL	1,349.0	16.61	354.57	1,307.55	290.52	-42.72	293.64	1.68	-1.47	2.75	152.13
	NORMAL	1,444.0	17.89	353.69	1,398.28	318.54	-45.61	321.79	1.38	1.35	-0.93	348.06
	NORMAL	1,539.0	19.39	354.57	1,488.29	348.74	-48.71	352.12	1.61	1.58	0.93	11.04
	NORMAL	1,634.0	18.77	353.60	1,578.07	379.63	-51.90	383.15	0.73	-0.65	-1.02	206.63
	NORMAL	1,729.0	17.27	352.90	1,668.41	408.82	-55.35	412.53	1.60	-1.58	-0.74	187.88
	NORMAL	1,824.0	17.19	353.07	1,759.15	436.75	-58.79	440.66	0.10	-0.08	0.18	147.89
	NORMAL	1,919.0	17.41	353.60	1,849.85	464.80	-62.07	468.90	0.28	0.23	0.56	35.87
	NORMAL	2,014.0	15.82	349.82	1,940.88	491.68	-65.94	496.05	2.02	-1.67	-3.98	212.41
	NORMAL	2,110.0	17.01	349.12	2,032.97	518.35	-70.90	523.16	1.26	1.24	-0.73	350.23
	NORMAL	2,205.0	17.23	347.63	2,123.76	545.74	-76.54	551.07	0.52	0.23	-1.57	295.92
	NORMAL	2,301.0	16.61	348.86	2,215.60	573.09	-82.24	578.96	0.74	-0.64	1.28	150.42
	NORMAL	2,397.0	17.36	351.05	2,307.41	600.70	-87.12	606.99	1.02	0.78	2.28	41.67
9/28/2014	NORMAL	2,492.0	17.71	352.46	2,398.00	629.03	-91.22	635.61	0.58	0.37	1.48	51.19
	NORMAL	2,580.0	18.81	350.97	2,481.57	656.31	-95.20	663.18	1.36	1.25	-1.69	336.29
9/29/2014	NORMAL	2,681.0	19.60	350.61	2,576.95	689.10	-100.52	696.40	0.79	0.78	-0.36	351.30
	NORMAL	2,777.0	17.58	350.09	2,667.93	719.28	-105.64	726.99	2.11	-2.10	-0.54	184.45
	NORMAL	2,872.0	16.35	350.97	2,758.80	746.62	-110.21	754.70	1.32	-1.29	0.93	168.63
	NORMAL	2,968.0	15.69	353.60	2,851.07	772.86	-113.78	781.19	1.02	-0.69	2.74	133.54
	NORMAL	3,063.0	15.16	352.99	2,942.65	797.96	-116.73	806.45	0.58	-0.56	-0.64	196.73
	NORMAL	3,158.0	15.96	352.81	3,034.17	823.24	-119.88	831.92	0.84	0.84	-0.19	356.46
	NORMAL	3,253.0	17.10	354.57	3,125.24	850.11	-122.83	858.94	1.31	1.20	1.85	24.56
	NORMAL	3,349.0	16.40	353.78	3,217.17	877.63	-125.64	886.58	0.77	-0.73	-0.82	197.64
	NORMAL	3,444.0	16.92	354.13	3,308.18	904.71	-128.51	913.79	0.56	0.55	0.37	11.09
	NORMAL	3,538.0	17.19	354.31	3,398.04	932.14	-131.28	941.34	0.29	0.29	0.19	11.15
	NORMAL	3,633.0	16.88	353.87	3,488.88	959.83	-134.15	969.15	0.35	-0.33	-0.46	202.37
	NORMAL	3,729.0	17.32	352.46	3,580.63	987.85	-137.51	997.36	0.63	0.46	-1.47	316.03
	NORMAL	3,824.0	16.92	351.93	3,671.42	1,015.56	-141.31	1,025.33	0.45	-0.42	-0.56	201.05
9/30/2014	NORMAL	3,919.0	17.32	352.02	3,762.21	1,043.25	-145.21	1,053.29	0.42	0.42	0.09	3.83
	NORMAL	4,015.0	17.19	351.76	3,853.89	1,071.44	-149.23	1,081.77	0.16	-0.14	-0.27	210.55
	NORMAL	4,110.0	17.06	351.67	3,944.68	1,099.12	-153.26	1,109.74	0.14	-0.14	-0.09	191.48
	NORMAL	4,205.0	16.84	351.49	4,035.56	1,126.52	-157.31	1,137.44	0.24	-0.23	-0.19	193.33
	NORMAL	4,301.0	16.09	350.88	4,127.62	1,153.41	-161.48	1,164.65	0.80	-0.78	-0.64	192.69
	NORMAL	4,396.0	15.60	349.47	4,219.01	1,178.96	-165.90	1,190.57	0.66	-0.52	-1.48	217.48
	NORMAL	4,489.0	16.13	352.11	4,308.47	1,204.06	-169.96	1,215.99	0.96	0.57	2.84	54.98
	NORMAL	4,584.0	15.39	351.76	4,399.90	1,229.60	-173.58	1,241.79	0.79	-0.78	-0.37	187.15
	NORMAL	4,680.0	16.09	353.34	4,492.30	1,255.42	-176.95	1,267.82	0.85	0.73	1.65	32.24
	NORMAL	4,775.0	17.27	353.07	4,583.30	1,282.50	-180.17	1,295.08	1.24	1.24	-0.28	356.11
	NORMAL	4,871.0	16.92	353.60	4,675.06	1,310.53	-183.45	1,323.29	0.40	-0.36	0.55	156.26
	NORMAL	4,966.0	16.75	352.28	4,765.99	1,337.83	-186.83	1,350.80	0.44	-0.18	-1.39	245.40
	NORMAL	5,061.0	16.48	351.49	4,857.02	1,364.72	-190.66	1,377.98	0.37	-0.28	-0.83	219.54
	NORMAL	5,157.0	15.96	351.49	4,949.20	1,391.24	-194.63	1,404.78	0.54	-0.54	0.00	180.00
	NORMAL	5,252.0	16.88	351.49	5,040.32	1,417.80	-198.61	1,431.63	0.97	0.97	0.00	0.00
	NORMAL	5,348.0	17.01	351.58	5,132.15	1,445.48	-202.72	1,459.61	0.14	0.14	0.09	11.45
	NORMAL	5,442.0	16.84	351.14	5,222.08	1,472.53	-206.84	1,486.97	0.23	-0.18	-0.47	216.79
	NORMAL	5,537.0	16.66	350.26	5,313.05	1,499.55	-211.26	1,514.35	0.33	-0.19	-0.93	234.21
	NORMAL	5,632.0	16.26	350.18	5,404.16	1,526.08	-215.83	1,541.26	0.42	-0.42	-0.08	183.21
	NORMAL	5,728.0	18.02	351.14	5,495.89	1,553.99	-220.41	1,569.54	1.86	1.83	1.00	9.59
	NORMAL	5,823.0	18.33	351.58	5,586.15	1,583.29	-224.86	1,599.17	0.36	0.33	0.46	24.09
	NORMAL	5,918.0	17.93	350.97	5,676.44	1,612.51	-229.34	1,628.73	0.47	-0.42	-0.64	205.10
10/1/2014	NORMAL	6,014.0	17.36	351.05	5,767.92	1,641.25	-233.89	1,657.83	0.59	-0.59	0.08	177.60
	NORMAL	6,109.0	17.10	351.67	5,858.66	1,669.07	-238.12	1,685.97	0.34	-0.27	0.65	145.06

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
10/1/2014	NORMAL	6,204.0	16.66	351.05	5,949.56	1,696.34	-242.26	1,713.55	0.50	-0.46	-0.65	201.96
	NORMAL	6,299.0	15.43	348.77	6,040.86	1,722.19	-246.84	1,739.79	1.45	-1.29	-2.40	206.04
	NORMAL	6,395.0	16.35	350.70	6,133.19	1,748.05	-251.51	1,766.05	1.11	0.96	2.01	30.80
	NORMAL	6,491.0	16.13	351.05	6,225.36	1,774.56	-255.77	1,792.90	0.25	-0.23	0.36	156.18
	NORMAL	6,585.0	15.16	349.56	6,315.88	1,799.55	-260.03	1,818.24	1.12	-1.03	-1.59	201.79
	NORMAL	6,680.0	14.73	348.86	6,407.67	1,823.61	-264.61	1,842.71	0.49	-0.45	-0.74	202.44
	NORMAL	6,776.0	14.51	349.47	6,500.56	1,847.41	-269.17	1,866.92	0.28	-0.23	0.64	145.31
	NORMAL	6,872.0	13.85	350.18	6,593.63	1,870.56	-273.33	1,890.42	0.71	-0.69	0.74	165.58
	NORMAL	6,967.0	12.22	355.54	6,686.19	1,891.79	-276.05	1,911.82	2.13	-1.72	5.64	146.03
	NORMAL	7,061.0	8.57	356.77	6,778.63	1,908.70	-277.22	1,928.73	3.89	-3.88	1.31	177.12
	NORMAL	7,156.0	9.01	359.67	6,872.51	1,923.21	-277.66	1,943.15	0.66	0.46	3.05	46.64
	NORMAL	7,251.0	6.90	359.40	6,966.59	1,936.36	-277.76	1,956.18	2.22	-2.22	-0.28	180.88
	NORMAL	7,347.0	5.28	358.61	7,062.05	1,946.54	-277.93	1,966.28	1.69	-1.69	-0.82	182.57
10/2/2014	NORMAL	7,442.0	4.18	359.40	7,156.72	1,954.37	-278.07	1,974.05	1.16	-1.16	0.83	177.00
	NORMAL	7,537.0	4.44	357.38	7,251.46	1,961.51	-278.28	1,981.14	0.32	0.27	-2.13	328.71
	NORMAL	7,632.0	3.25	6.17	7,346.24	1,967.86	-278.15	1,987.41	1.39	-1.25	9.25	157.99
	NORMAL	7,728.0	2.94	7.22	7,442.10	1,973.01	-277.55	1,992.42	0.33	-0.32	1.09	170.16
	NORMAL	7,823.0	2.68	6.00	7,536.99	1,977.63	-277.01	1,996.92	0.28	-0.27	-1.28	192.35
	NORMAL	7,918.0	2.37	1.60	7,631.89	1,981.80	-276.73	2,001.01	0.38	-0.33	-4.63	209.83
	NORMAL	8,013.0	1.93	358.79	7,726.83	1,985.37	-276.71	2,004.53	0.48	-0.46	-2.96	192.07
	NORMAL	8,108.0	1.63	13.03	7,821.78	1,988.28	-276.44	2,007.38	0.56	-0.32	14.99	131.13
10/3/2014	NORMAL	8,203.0	1.67	49.41	7,916.75	1,990.50	-275.08	2,009.38	1.08	0.04	38.29	106.07
	NORMAL	8,298.0	1.41	54.25	8,011.71	1,992.08	-273.08	2,010.66	0.31	-0.27	5.09	155.83
	NORMAL	8,394.0	1.10	56.88	8,107.69	1,993.28	-271.35	2,011.60	0.33	-0.32	2.74	170.79
	NORMAL	8,489.0	0.70	63.21	8,202.68	1,994.04	-270.07	2,012.16	0.43	-0.42	6.66	169.19
	NORMAL	8,584.0	0.48	64.97	8,297.67	1,994.47	-269.19	2,012.46	0.23	-0.23	1.85	176.17
	NORMAL	8,679.0	0.22	66.73	8,392.67	1,994.71	-268.66	2,012.63	0.27	-0.27	1.85	178.51
	NORMAL	8,774.0	0.13	207.70	8,487.67	1,994.68	-268.54	2,012.59	0.35	-0.09	148.39	165.69
	NORMAL	8,869.0	0.53	220.36	8,582.67	1,994.25	-268.88	2,012.21	0.43	0.42	13.33	16.70
	NORMAL	8,963.0	0.79	223.17	8,676.66	1,993.45	-269.60	2,011.52	0.28	0.28	2.99	8.50
	NORMAL	9,059.0	1.10	226.69	8,772.65	1,992.34	-270.73	2,010.57	0.33	0.32	3.67	12.37
	NORMAL	9,154.0	1.10	224.40	8,867.63	1,991.06	-272.03	2,009.50	0.05	0.00	-2.41	268.86
	NORMAL	9,250.0	1.10	220.36	8,963.62	1,989.70	-273.27	2,008.33	0.08	0.00	-4.21	267.98
	NORMAL	9,345.0	1.05	219.48	9,058.60	1,988.33	-274.41	2,007.14	0.06	-0.05	-0.93	197.83
	NORMAL	9,440.0	1.50	210.78	9,153.58	1,986.59	-275.60	2,005.59	0.51	0.47	-9.16	332.33
	NORMAL	9,535.0	1.41	205.60	9,248.54	1,984.47	-276.74	2,003.65	0.17	-0.09	-5.45	233.05
	NORMAL	9,630.0	1.58	217.72	9,343.51	1,982.38	-278.05	2,001.77	0.38	0.18	12.76	67.88
10/4/2014	NORMAL	9,726.0	1.89	220.80	9,439.47	1,980.13	-279.89	1,999.81	0.34	0.32	3.21	18.29
	NORMAL	9,821.0	2.02	219.83	9,534.41	1,977.66	-281.99	1,997.66	0.14	0.14	-1.02	345.23
	NORMAL	9,916.0	2.29	216.14	9,629.35	1,974.84	-284.18	1,995.19	0.32	0.28	-3.88	330.95
	NORMAL	9,961.0	2.29	216.14	9,674.31	1,973.39	-285.24	1,993.90	0.00	0.00	0.00	0.00