

1 General

1.1 Customer Information

Company	PICEANCE HL
Representative	Eric Kolstad
Address	1515 Arapahoe St., Suite 1000 Denver, CO 80202

1.2 Well/Wellbore Information

Well	RG 42-15-298	Wellbore No.	00
Wellbore Legal Name	RG 42-15-298	Common Wellbore Name	RG 42-15-298
Project	RG 14-02S-098W	Site	RG 12-14-298 Pad
Vertical Section Azimuth	260.51 (°)	North reference	True
Origin N/S		Origin EW	
Spud date	12/3/2013	UWI	RG 42-15-298
Active datum	KB @6,581.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	12/3/2013	Ended	
Tool Name	MWD	Engineer	

2.1.1 Tie On Point

MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (ft)
0.0	0.00	0.00	0.00	0.00	0.00

2.1.2 Survey Stations

1203

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
12/3/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/3/2013	NORMAL	215.0	2.10	275.66	214.95	0.39	-3.92	3.80	0.98	0.98	0.00	275.66
	NORMAL	307.0	4.13	267.33	306.81	0.40	-8.91	8.72	2.25	2.21	-9.05	343.25
	NORMAL	399.0	7.21	263.11	398.35	-0.45	-17.95	17.78	3.38	3.35	-4.59	350.19
	NORMAL	491.0	10.99	255.90	489.18	-3.28	-32.19	32.29	4.28	4.11	-7.84	339.63
12/4/2013	NORMAL	583.0	13.16	255.77	579.14	-7.99	-50.85	51.47	2.36	2.36	-0.14	359.22
	NORMAL	676.0	13.63	252.92	669.61	-13.81	-71.59	72.89	0.87	0.51	-3.06	304.05
	NORMAL	768.0	13.79	254.95	758.99	-19.84	-92.54	94.54	0.55	0.17	2.21	72.59
	NORMAL	860.0	13.40	258.44	848.41	-24.82	-113.57	116.11	0.99	-0.42	3.79	117.12
	NORMAL	953.0	13.54	258.28	938.86	-29.19	-134.79	137.76	0.16	0.15	-0.17	345.02
	NORMAL	1,046.0	12.22	263.99	1,029.52	-32.44	-155.24	158.46	1.97	-1.42	6.14	138.80
	NORMAL	1,173.0	12.22	265.04	1,153.64	-35.01	-182.00	185.28	0.17	0.00	0.83	90.51
	NORMAL	1,268.0	12.66	262.76	1,246.41	-37.19	-202.34	205.70	0.69	0.46	-2.40	310.74
	NORMAL	1,362.0	13.37	262.67	1,338.00	-39.87	-223.34	226.86	0.76	0.76	-0.10	358.32
	NORMAL	1,457.0	13.89	262.76	1,430.32	-42.71	-245.55	249.23	0.55	0.55	0.09	2.38
	NORMAL	1,552.0	14.42	262.06	1,522.44	-45.78	-268.57	272.45	0.59	0.58	-0.74	341.76
	NORMAL	1,647.0	15.12	263.46	1,614.30	-48.83	-292.60	296.65	0.83	0.74	1.47	27.69
	NORMAL	1,742.0	14.16	264.08	1,706.21	-51.44	-316.47	320.62	1.02	-1.01	0.65	171.03
	NORMAL	1,837.0	14.21	262.21	1,798.32	-54.22	-339.58	343.87	0.49	0.05	-1.97	275.32
	NORMAL	1,932.0	14.60	261.73	1,890.33	-57.52	-362.98	367.50	0.43	0.41	-0.51	342.74
12/5/2013	NORMAL	2,027.0	15.39	261.79	1,982.09	-61.04	-387.31	392.07	0.83	0.83	0.06	1.15

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 (°)
12/5/2013	NORMAL	2,121.0	15.83	262.94	2,072.63	-64.40	-412.37	417.35	0.57	0.47	1.22	35.67
	NORMAL	2,216.0	15.04	260.65	2,164.20	-67.99	-437.40	442.62	1.05	-0.83	-2.41	216.55
	NORMAL	2,311.0	14.95	260.65	2,255.97	-71.99	-461.65	467.20	0.09	-0.09	0.00	180.00
	NORMAL	2,406.0	15.12	258.98	2,347.71	-76.35	-485.90	491.84	0.49	0.18	-1.76	290.62
	NORMAL	2,500.0	14.51	258.01	2,438.59	-81.14	-509.46	515.86	0.70	-0.65	-1.03	201.66
	NORMAL	2,594.0	13.98	256.17	2,529.70	-86.30	-532.00	538.95	0.74	-0.56	-1.96	219.62
12/6/2013	NORMAL	2,689.0	14.16	252.48	2,621.85	-92.54	-554.22	561.90	0.96	0.19	-3.88	279.55
	NORMAL	2,784.0	13.10	254.15	2,714.17	-98.98	-575.66	584.10	1.19	-1.12	1.76	160.44
	NORMAL	2,879.0	11.87	261.44	2,806.93	-103.37	-595.68	604.57	2.10	-1.29	7.67	131.49
	NORMAL	2,974.0	12.13	261.71	2,899.86	-106.26	-615.22	624.32	0.28	0.27	0.28	12.32
	NORMAL	3,069.0	12.57	260.39	2,992.66	-109.43	-635.29	644.64	0.55	0.46	-1.39	326.67
	NORMAL	3,164.0	11.87	263.02	3,085.51	-112.34	-655.18	664.74	0.94	-0.74	2.77	142.79
	NORMAL	3,258.0	11.52	260.21	3,177.56	-115.11	-674.03	683.78	0.71	-0.37	-2.99	237.06
	NORMAL	3,342.0	10.90	259.16	3,259.95	-118.03	-690.09	700.11	0.78	-0.74	-1.25	197.71
12/31/2013	NORMAL	3,452.0	9.06	256.34	3,368.28	-122.03	-708.73	719.15	1.73	-1.67	-2.56	193.49
	NORMAL	3,547.0	9.50	248.96	3,462.04	-126.62	-723.31	734.29	1.33	0.46	-7.77	286.62
	NORMAL	3,641.0	11.70	251.42	3,554.44	-132.44	-739.59	751.30	2.39	2.34	2.62	12.83
	NORMAL	3,736.0	14.42	251.95	3,646.97	-139.17	-759.97	772.51	2.87	2.86	0.56	2.78
	NORMAL	3,831.0	14.16	257.05	3,739.03	-145.44	-782.54	795.81	1.35	-0.27	5.37	104.13
	NORMAL	3,926.0	15.74	261.35	3,830.82	-149.99	-806.61	820.30	2.03	1.66	4.53	37.16
	NORMAL	4,021.0	13.63	263.29	3,922.71	-153.23	-830.46	844.36	2.28	-2.22	2.04	167.82
	NORMAL	4,115.0	11.96	265.92	4,014.37	-155.22	-851.18	865.12	1.88	-1.78	2.80	162.05
	NORMAL	4,210.0	11.52	261.00	4,107.39	-157.40	-870.37	884.41	1.15	-0.46	-5.18	243.88
	NORMAL	4,304.0	15.74	260.04	4,198.72	-161.08	-892.21	906.56	4.50	4.49	-1.02	356.46
	NORMAL	4,399.0	16.80	262.14	4,289.92	-165.19	-918.50	933.17	1.28	1.12	2.21	30.04
	NORMAL	4,494.0	16.97	273.66	4,380.85	-166.18	-945.94	960.40	3.52	0.18	12.13	92.61
	NORMAL	4,589.0	15.21	276.73	4,472.12	-163.83	-972.16	985.87	2.06	-1.85	3.23	155.67
	NORMAL	4,684.0	12.66	269.35	4,564.33	-162.49	-994.95	1,008.12	3.27	-2.68	-7.77	211.33
	NORMAL	4,778.0	13.37	263.00	4,655.92	-163.93	-1,016.04	1,029.16	1.70	0.76	-6.76	293.29
	NORMAL	4,873.0	12.13	259.07	4,748.58	-167.16	-1,036.74	1,050.11	1.59	-1.31	-4.14	213.07
	NORMAL	4,968.0	11.08	266.63	4,841.64	-169.59	-1,055.66	1,069.17	1.94	-1.11	7.96	128.29
	NORMAL	5,063.0	8.71	262.76	4,935.22	-171.04	-1,071.91	1,085.44	2.59	-2.49	-4.07	193.77
	NORMAL	5,157.0	8.79	269.18	5,028.13	-172.04	-1,086.15	1,099.65	1.04	0.09	6.83	88.49
	NORMAL	5,252.0	7.65	270.58	5,122.15	-172.07	-1,099.73	1,113.05	1.22	-1.20	1.47	170.73
1/1/2014	NORMAL	5,347.0	5.56	284.60	5,216.52	-170.85	-1,110.51	1,123.48	2.76	-2.20	14.76	149.17
	NORMAL	5,442.0	3.69	295.63	5,311.21	-168.37	-1,117.72	1,130.18	2.17	-1.97	11.61	159.99
	NORMAL	5,536.0	2.66	255.05	5,405.08	-167.62	-1,122.56	1,134.83	2.56	-1.10	-43.17	226.04
	NORMAL	5,631.0	2.46	257.13	5,499.98	-168.64	-1,126.67	1,139.06	0.23	-0.21	2.19	156.12
	NORMAL	5,726.0	2.90	246.76	5,594.88	-170.05	-1,130.87	1,143.43	0.69	0.46	-10.92	306.96
	NORMAL	5,820.0	2.64	238.24	5,688.77	-172.13	-1,134.89	1,147.74	0.52	-0.28	-9.06	233.52
	NORMAL	5,915.0	1.93	284.29	5,783.70	-172.88	-1,138.30	1,151.23	2.00	-0.75	48.47	133.09
	NORMAL	6,010.0	2.29	354.34	5,878.65	-170.60	-1,140.04	1,152.57	2.57	0.38	73.74	118.07
	NORMAL	6,105.0	2.20	53.14	5,973.59	-167.62	-1,138.77	1,150.82	2.32	-0.09	61.89	121.42
	NORMAL	6,199.0	1.06	54.90	6,067.55	-166.03	-1,136.62	1,148.44	1.21	-1.21	1.87	178.36
	NORMAL	6,294.0	0.53	46.90	6,162.54	-165.23	-1,135.58	1,147.28	0.57	-0.56	-8.42	187.85
	NORMAL	6,388.0	0.44	30.46	6,256.54	-164.62	-1,135.08	1,146.68	0.18	-0.10	-17.49	229.07
	NORMAL	6,483.0	0.87	164.40	6,351.53	-165.00	-1,134.70	1,146.37	1.28	0.45	140.99	149.03
	NORMAL	6,578.0	0.79	186.03	6,446.52	-166.35	-1,134.57	1,146.47	0.34	-0.08	22.77	114.97
	NORMAL	6,672.0	1.14	199.92	6,540.51	-167.87	-1,134.96	1,147.10	0.45	0.37	14.78	40.83
	NORMAL	6,767.0	1.47	249.15	6,635.49	-169.19	-1,136.42	1,148.76	1.19	0.35	51.82	99.18
	NORMAL	6,862.0	1.89	246.64	6,730.45	-170.25	-1,139.00	1,151.48	0.45	0.44	-2.64	348.81
	NORMAL	6,957.0	1.58	296.42	6,825.41	-170.28	-1,141.61	1,154.06	1.57	-0.33	52.40	125.78
	NORMAL	7,051.0	1.04	260.77	6,919.39	-169.84	-1,143.61	1,155.96	1.01	-0.57	-37.93	219.52
1/2/2014	NORMAL	7,146.0	0.53	199.57	7,014.38	-170.40	-1,144.61	1,157.04	0.96	-0.54	-64.42	210.62
	NORMAL	7,241.0	0.86	248.31	7,109.37	-171.07	-1,145.42	1,157.95	0.68	0.35	51.31	86.71
	NORMAL	7,336.0	1.58	228.75	7,204.35	-172.20	-1,147.06	1,159.76	0.86	0.76	-20.59	319.93

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 (°)
1/2/2014	NORMAL	7,431.0	0.35	291.24	7,299.34	-172.96	-1,148.32	1,161.12	1.53	-1.29	65.78	167.65
	NORMAL	7,525.0	1.58	36.00	7,393.33	-171.81	-1,147.83	1,160.44	1.81	1.31	111.45	116.22
	NORMAL	7,620.0	1.41	30.03	7,488.29	-169.74	-1,146.47	1,158.77	0.24	-0.18	-6.28	219.54
	NORMAL	7,715.0	1.14	47.96	7,583.27	-168.09	-1,145.18	1,157.23	0.50	-0.28	18.87	132.83
	NORMAL	7,809.0	0.70	79.42	7,677.26	-167.36	-1,143.93	1,155.86	0.70	-0.47	33.47	146.06
	NORMAL	7,904.0	1.58	10.07	7,772.24	-165.96	-1,143.13	1,154.84	1.56	0.93	-73.00	264.49
	NORMAL	7,999.0	1.49	34.60	7,867.21	-163.66	-1,142.20	1,153.55	0.69	-0.09	25.82	109.94
	NORMAL	8,093.0	1.14	39.17	7,961.18	-161.93	-1,140.91	1,151.99	0.39	-0.37	4.86	165.60
	NORMAL	8,188.0	0.62	47.87	8,056.17	-160.85	-1,139.93	1,150.85	0.56	-0.55	9.16	169.91
	NORMAL	8,283.0	0.62	125.04	8,151.17	-160.80	-1,139.13	1,150.05	0.81	0.00	81.23	128.58
	NORMAL	8,378.0	0.97	198.75	8,246.16	-161.86	-1,138.97	1,150.07	1.05	0.37	77.59	110.49
	NORMAL	8,472.0	1.67	222.51	8,340.14	-163.62	-1,140.15	1,151.52	0.93	0.74	25.28	50.30
	NORMAL	8,567.0	0.68	322.11	8,435.12	-164.19	-1,141.43	1,152.88	2.01	-1.04	104.84	159.39
	NORMAL	8,662.0	0.97	258.80	8,530.12	-163.91	-1,142.57	1,153.95	0.95	0.31	-66.64	254.26
	1/3/2014 NORMAL	8,756.0	1.93	215.65	8,624.09	-165.35	-1,144.27	1,155.87	1.48	1.02	-45.90	288.37
	NORMAL	8,851.0	1.41	245.71	8,719.05	-167.13	-1,146.27	1,158.14	1.05	-0.55	31.64	135.13
	NORMAL	8,945.0	0.79	346.61	8,813.04	-166.97	-1,147.47	1,159.30	1.85	-0.66	107.34	153.55
	NORMAL	9,040.0	1.56	16.85	8,908.02	-165.10	-1,147.25	1,158.77	1.01	0.81	31.83	54.63
	NORMAL	9,135.0	0.97	351.09	9,002.99	-163.07	-1,147.00	1,158.19	0.85	-0.62	-27.12	211.56
	NORMAL	9,229.0	0.97	297.12	9,096.98	-161.92	-1,147.83	1,158.82	0.94	0.00	-57.41	243.02
	NORMAL	9,324.0	1.06	126.97	9,191.98	-162.08	-1,147.84	1,158.86	2.13	0.09	-179.11	185.14
	NORMAL	9,419.0	0.97	165.73	9,286.96	-163.39	-1,146.94	1,158.18	0.71	-0.09	40.80	116.56
	1/4/2014 NORMAL	9,514.0	1.14	211.78	9,381.95	-164.97	-1,147.24	1,158.74	0.88	0.18	48.47	102.29
	NORMAL	9,608.0	0.44	221.45	9,475.94	-166.03	-1,147.97	1,159.64	0.76	-0.74	10.29	174.03
	NORMAL	9,703.0	0.18	302.57	9,570.94	-166.23	-1,148.34	1,160.03	0.47	-0.27	85.39	156.66
	NORMAL	9,798.0	1.32	255.03	9,665.93	-166.43	-1,149.52	1,161.23	1.27	1.20	-50.04	306.14
	NORMAL	9,892.0	0.61	312.95	9,759.92	-166.37	-1,150.94	1,162.62	1.19	-0.76	61.62	152.57
	NORMAL	9,987.0	0.79	253.44	9,854.91	-166.21	-1,151.93	1,163.57	0.75	0.19	-62.64	252.92
	NORMAL	10,081.0	1.06	237.62	9,948.90	-166.86	-1,153.29	1,165.02	0.39	0.29	-16.83	308.50
	NORMAL	10,176.0	1.93	249.31	10,043.87	-167.90	-1,155.53	1,167.40	0.97	0.92	12.31	25.22
	NORMAL	10,270.0	2.72	248.49	10,137.79	-169.27	-1,159.08	1,171.13	0.84	0.84	-0.87	357.18
	NORMAL	10,365.0	1.58	232.88	10,232.72	-170.89	-1,162.23	1,174.50	1.34	-1.20	-16.43	199.54
	NORMAL	10,460.0	0.53	231.47	10,327.71	-171.96	-1,163.61	1,176.04	1.11	-1.11	-1.48	180.71
	NORMAL	10,554.0	0.26	50.86	10,421.70	-172.09	-1,163.79	1,176.24	0.84	-0.29	190.84	179.80
	NORMAL	10,649.0	0.13	72.95	10,516.70	-171.92	-1,163.52	1,175.94	0.16	-0.14	23.25	160.69
	NORMAL	10,744.0	0.26	283.15	10,611.70	-171.84	-1,163.63	1,176.03	0.40	0.14	-157.68	200.24
	1/5/2014 NORMAL	10,839.0	1.36	251.03	10,706.69	-172.16	-1,164.90	1,177.34	1.21	1.16	-33.81	320.97
	NORMAL	10,932.0	1.93	240.17	10,799.66	-173.30	-1,167.30	1,179.90	0.70	0.61	-11.68	325.82
	NORMAL	10,985.0	1.93	240.17	10,852.63	-174.19	-1,168.85	1,181.57	0.00	0.00	0.00	0.00