

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 313-14-298	Wellbore No.	00
Wellbore Legal Name	RG 313-14-298	Common Wellbore Name	RG 313-14-298
Project	RG 14-02S-098W	Site	RG 12-14-298 Pad
Vertical Section Azimuth	180.39 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	12/9/2013	UWI	RG 313-14-298
Active datum	KB @6,581.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SDI
Date Started	12/9/2013	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

7073

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
12/9/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/9/2013	NORMAL	245.0	2.99	198.33	244.89	-6.07	-2.01	6.08	1.22	1.22	0.00	198.33
	NORMAL	338.0	5.99	182.04	337.60	-13.22	-2.95	13.24	3.47	3.23	-17.52	328.70
	NORMAL	430.0	10.15	178.63	428.67	-26.13	-2.92	26.15	4.55	4.62	-3.71	351.74
	NORMAL	522.0	14.14	180.30	518.59	-45.48	-2.79	45.50	4.35	4.34	1.82	5.85
	NORMAL	614.0	14.68	178.73	607.70	-68.37	-2.59	68.39	0.72	0.59	-1.71	323.35
12/10/2013	NORMAL	707.0	15.04	177.68	697.59	-92.21	-1.84	92.22	0.48	0.39	-1.13	322.70
	NORMAL	799.0	14.51	180.05	786.54	-115.66	-1.37	115.67	0.87	-0.58	2.58	132.39
	NORMAL	891.0	14.77	180.67	875.56	-138.91	-1.51	138.92	0.33	0.28	0.67	31.38
	NORMAL	984.0	14.60	180.84	965.52	-162.49	-1.82	162.49	0.19	-0.18	0.18	165.86
	NORMAL	1,078.0	14.42	182.69	1,056.52	-186.02	-2.55	186.04	0.53	-0.19	1.97	112.12
	NORMAL	1,173.0	14.51	181.28	1,148.51	-209.74	-3.37	209.76	0.38	0.09	-1.48	283.65
	NORMAL	1,268.0	14.68	180.05	1,240.45	-233.67	-3.64	233.69	0.37	0.18	-1.29	298.15
	NORMAL	1,363.0	15.56	179.88	1,332.16	-258.45	-3.63	258.47	0.93	0.93	-0.18	357.03
	NORMAL	1,457.0	16.09	179.79	1,422.59	-284.09	-3.55	284.10	0.56	0.56	-0.10	357.31
	NORMAL	1,552.0	15.30	176.62	1,514.05	-309.76	-2.77	309.78	1.23	-0.83	-3.34	225.83
	NORMAL	1,647.0	16.11	177.46	1,605.51	-335.44	-1.44	335.45	0.89	0.85	0.88	16.08
	NORMAL	1,742.0	14.68	176.71	1,697.09	-360.63	-0.17	360.62	1.52	-1.51	-0.79	187.57
	NORMAL	1,837.0	15.25	178.50	1,788.87	-385.14	0.85	385.12	0.77	0.60	1.88	39.91
	NORMAL	1,932.0	15.48	182.60	1,880.48	-410.29	0.60	410.28	1.17	0.24	4.32	80.03
	NORMAL	2,027.0	14.07	181.46	1,972.34	-434.50	-0.27	434.49	1.52	-1.48	-1.20	191.10

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (")	Azi. (")	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS ("/100usft)	Build Rate ("/100usft)	Turn ("/100usft)	Tface (")
12/10/2013	NORMAL	2,122.0	14.33	181.02	2,064.43	-457.80	-0.77	457.80	0.30	0.27	-0.46	337.24
	NORMAL	2,216.0	13.89	181.28	2,155.60	-480.71	-1.23	480.71	0.47	-0.47	0.28	171.93
	NORMAL	2,311.0	14.25	181.19	2,247.75	-503.80	-1.73	503.80	0.38	0.38	-0.09	356.48
	NORMAL	2,406.0	13.98	179.96	2,339.88	-526.97	-1.96	526.97	0.42	-0.28	-1.29	227.41
12/11/2013	NORMAL	2,500.0	14.07	179.61	2,431.08	-549.75	-1.88	549.75	0.13	0.10	-0.37	316.53
	NORMAL	2,595.0	14.24	179.26	2,523.19	-572.98	-1.65	572.98	0.20	0.18	-0.37	333.11
	NORMAL	2,690.0	14.24	178.16	2,615.28	-596.34	-1.12	596.33	0.28	0.00	-1.16	269.47
	NORMAL	2,785.0	14.42	177.33	2,707.32	-619.83	-0.19	619.82	0.29	0.19	-0.87	310.82
	NORMAL	2,880.0	14.07	177.77	2,799.40	-643.19	0.81	643.17	0.39	-0.37	0.46	163.02
	NORMAL	2,974.0	13.19	176.98	2,890.75	-665.32	1.82	665.29	0.96	-0.94	-0.84	191.56
	NORMAL	3,069.0	13.19	179.44	2,983.25	-686.98	2.49	686.95	0.59	0.00	2.59	91.20
	NORMAL	3,164.0	12.93	176.01	3,075.79	-708.42	3.34	708.38	0.86	-0.27	-3.61	249.79
	NORMAL	3,259.0	12.84	177.33	3,168.40	-729.57	4.57	729.52	0.32	-0.09	1.39	107.64
	NORMAL	3,353.0	12.31	179.44	3,260.14	-750.02	5.15	749.97	0.75	-0.56	2.24	140.11
12/17/2013	NORMAL	3,456.0	11.49	178.55	3,360.93	-771.26	5.52	771.20	0.82	-0.80	-0.86	192.18
	NORMAL	3,550.0	11.56	185.24	3,453.04	-790.00	4.90	789.94	1.42	0.07	7.12	90.28
	NORMAL	3,645.0	12.23	185.11	3,546.00	-809.50	3.13	809.46	0.71	0.71	-0.14	357.65
	NORMAL	3,740.0	10.92	183.05	3,639.07	-828.51	1.76	828.47	1.45	-1.38	-2.17	196.50
	NORMAL	3,834.0	10.39	183.86	3,731.44	-845.85	0.71	845.83	0.59	-0.56	0.86	164.62
	NORMAL	3,930.0	12.03	182.38	3,825.61	-864.49	-0.29	864.47	1.73	1.71	-1.54	349.32
	NORMAL	4,024.0	11.87	179.48	3,917.57	-883.94	-0.61	883.93	0.66	-0.17	-3.09	253.66
	NORMAL	4,119.0	11.81	176.17	4,010.55	-903.41	0.13	903.39	0.72	-0.06	-3.48	263.33
	NORMAL	4,214.0	11.80	171.99	4,103.55	-922.73	2.14	922.70	0.90	-0.01	-4.40	267.28
	NORMAL	4,308.0	12.04	178.84	4,195.52	-942.05	3.67	942.01	1.53	0.26	7.29	83.74
	NORMAL	4,403.0	11.93	180.65	4,288.45	-961.78	3.76	961.73	0.41	-0.12	1.91	107.20
	NORMAL	4,498.0	12.94	173.30	4,381.23	-982.16	4.89	982.11	1.97	1.06	-7.74	298.92
12/18/2013	NORMAL	4,593.0	12.71	177.20	4,473.86	-1,003.16	6.64	1,003.10	0.94	-0.24	4.11	106.77
	NORMAL	4,687.0	11.66	184.53	4,565.75	-1,022.96	6.40	1,022.90	1.99	-1.12	7.80	127.71
	NORMAL	4,782.0	11.16	190.82	4,658.88	-1,041.57	3.91	1,041.51	1.41	-0.53	6.62	114.95
	NORMAL	4,877.0	11.33	183.00	4,752.06	-1,059.92	1.70	1,059.88	1.61	0.18	-8.23	272.52
	NORMAL	4,972.0	9.76	174.95	4,845.46	-1,077.26	1.92	1,077.22	2.26	-1.65	-8.47	219.27
	NORMAL	5,066.0	8.71	174.34	4,938.24	-1,092.28	3.32	1,092.23	1.12	-1.12	-0.65	185.03
	NORMAL	5,161.0	9.85	165.64	5,032.00	-1,107.31	6.05	1,107.24	1.90	1.20	-9.16	304.75
	NORMAL	5,256.0	10.30	164.84	5,125.53	-1,123.38	10.29	1,123.28	0.50	0.47	-0.84	342.33
	NORMAL	5,351.0	9.67	168.63	5,219.09	-1,139.40	14.08	1,139.28	0.96	-0.66	3.99	135.65
	NORMAL	5,445.0	10.60	173.17	5,311.63	-1,155.72	16.66	1,155.58	1.30	0.99	4.83	42.91
	NORMAL	5,540.0	8.79	178.82	5,405.27	-1,171.66	17.85	1,171.51	2.15	-1.91	5.95	155.03
	NORMAL	5,634.0	8.24	188.95	5,498.24	-1,185.49	16.95	1,185.35	1.70	-0.59	10.78	115.10
	NORMAL	5,729.0	7.20	180.86	5,592.38	-1,198.17	15.80	1,198.04	1.58	-1.09	-8.52	222.30
	NORMAL	5,824.0	7.13	175.88	5,686.84	-1,210.00	16.14	1,209.87	0.66	-0.07	-5.24	261.10
	NORMAL	5,919.0	5.85	180.06	5,781.03	-1,220.73	16.56	1,220.59	1.44	-1.35	4.40	161.81
	NORMAL	6,013.0	4.92	179.24	5,874.61	-1,229.55	16.61	1,229.41	0.99	-0.99	-0.87	184.32
	NORMAL	6,108.0	3.46	174.89	5,969.36	-1,236.48	16.92	1,236.33	1.57	-1.54	-4.58	190.12
	NORMAL	6,203.0	1.60	165.70	6,064.26	-1,240.62	17.50	1,240.47	2.00	-1.96	-9.67	187.74
	NORMAL	6,297.0	0.32	305.76	6,158.25	-1,241.74	17.61	1,241.59	1.98	-1.36	149.00	173.65
	NORMAL	6,392.0	0.52	225.62	6,253.25	-1,241.88	17.09	1,241.74	0.59	0.21	-84.36	245.73
	NORMAL	6,487.0	0.22	265.17	6,348.24	-1,242.20	16.60	1,242.06	0.40	-0.32	41.63	158.21
	NORMAL	6,581.0	0.64	231.74	6,442.24	-1,242.54	16.00	1,242.40	0.50	0.45	-35.56	311.70
	NORMAL	6,676.0	0.51	202.36	6,537.24	-1,243.26	15.43	1,243.13	0.33	-0.14	-30.93	231.98
	NORMAL	6,771.0	0.20	224.54	6,632.24	-1,243.77	15.15	1,243.64	0.35	-0.33	23.35	166.91
	NORMAL	6,865.0	0.34	193.55	6,726.24	-1,244.16	14.97	1,244.03	0.21	0.15	-32.97	297.59
	NORMAL	6,960.0	0.63	238.02	6,821.23	-1,244.71	14.46	1,244.58	0.48	0.31	46.81	76.06
	NORMAL	7,055.0	0.43	256.80	6,916.23	-1,245.07	13.67	1,244.94	0.28	-0.21	19.77	148.16
	NORMAL	7,150.0	0.15	242.97	7,011.23	-1,245.20	13.21	1,245.09	0.30	-0.29	-14.56	187.19
12/19/2013	NORMAL	7,245.0	0.27	188.17	7,106.23	-1,245.48	13.07	1,245.36	0.23	0.13	-57.68	271.46
	NORMAL	7,339.0	0.21	235.50	7,200.23	-1,245.80	12.90	1,245.68	0.21	-0.06	50.35	129.58

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (")	Azi. (")	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (")
12/19/2013	NORMAL	7,434.0	0.70	223.38	7,295.22	-1,246.32	12.35	1,246.21	0.52	0.52	-12.76	342.79
	NORMAL	7,529.0	1.44	50.95	7,390.22	-1,245.99	12.88	1,245.87	2.25	0.78	-181.51	185.10
	NORMAL	7,623.0	2.29	33.34	7,484.17	-1,243.68	14.83	1,243.55	1.08	0.90	-18.73	317.00
	NORMAL	7,718.0	1.98	27.15	7,579.10	-1,240.63	16.62	1,240.49	0.41	-0.33	-6.52	213.58
	NORMAL	7,813.0	2.18	26.15	7,674.04	-1,237.55	18.17	1,237.40	0.21	0.21	-1.05	349.21
	NORMAL	7,907.0	0.24	264.95	7,768.02	-1,235.96	18.76	1,235.80	2.46	-2.06	-128.94	185.09
	NORMAL	8,002.0	0.77	213.14	7,863.01	-1,236.51	18.21	1,236.36	0.68	0.56	-54.54	291.31
	NORMAL	8,097.0	0.42	161.04	7,958.01	-1,237.38	17.98	1,237.22	0.64	-0.37	-54.84	212.92
	NORMAL	8,192.0	0.48	207.96	8,053.01	-1,238.06	17.90	1,237.91	0.38	0.06	49.39	104.73
	NORMAL	8,286.0	0.46	151.69	8,147.00	-1,238.74	17.90	1,238.59	0.47	-0.02	-59.86	239.59
	NORMAL	8,381.0	0.57	229.97	8,242.00	-1,239.38	17.72	1,239.23	0.69	0.12	82.40	121.66
	NORMAL	8,476.0	0.80	195.63	8,336.99	-1,240.32	17.18	1,240.17	0.48	0.24	-36.15	281.35
	NORMAL	8,571.0	0.47	206.98	8,431.99	-1,241.30	16.82	1,241.16	0.37	-0.35	11.95	164.75
	NORMAL	8,665.0	0.42	206.19	8,525.99	-1,241.96	16.49	1,241.82	0.05	-0.05	-0.84	186.60
	NORMAL	8,760.0	0.50	255.47	8,620.98	-1,242.37	15.94	1,242.24	0.41	0.08	51.87	103.90
	NORMAL	8,855.0	0.35	210.11	8,715.98	-1,242.73	15.39	1,242.60	0.37	-0.16	-47.75	224.43
12/20/2013	NORMAL	8,950.0	1.06	200.44	8,810.97	-1,243.80	14.94	1,243.67	0.76	0.75	-10.18	345.63
	NORMAL	9,045.0	0.60	236.49	8,905.96	-1,244.90	14.22	1,244.78	0.71	-0.48	37.95	148.44
	NORMAL	9,140.0	0.62	256.87	9,000.96	-1,245.29	13.30	1,245.17	0.23	0.02	21.45	94.98
	NORMAL	9,234.0	0.50	251.59	9,094.96	-1,245.54	12.42	1,245.42	0.14	-0.13	-5.62	200.64
	NORMAL	9,329.0	1.23	224.26	9,189.94	-1,246.40	11.31	1,246.29	0.86	0.77	-28.77	316.39
	NORMAL	9,424.0	0.29	203.31	9,284.93	-1,247.35	10.51	1,247.25	1.02	-0.99	-22.05	186.17
	NORMAL	9,518.0	0.68	263.56	9,378.93	-1,247.63	9.86	1,247.53	0.63	0.41	64.10	85.41
	NORMAL	9,613.0	0.60	203.59	9,473.93	-1,248.15	9.10	1,248.06	0.68	-0.08	-63.13	233.83
12/21/2013	NORMAL	9,708.0	0.56	246.50	9,568.92	-1,248.79	8.48	1,248.70	0.45	-0.04	45.17	116.47
	NORMAL	9,803.0	0.53	225.75	9,663.92	-1,249.28	7.73	1,249.20	0.21	-0.03	-21.84	251.08
	NORMAL	9,897.0	0.09	316.37	9,757.92	-1,249.53	7.37	1,249.45	0.57	-0.47	96.40	170.38
	NORMAL	9,991.0	2.07	10.75	9,851.90	-1,247.81	7.64	1,247.73	2.15	2.11	57.85	56.46
	NORMAL	10,086.0	1.93	352.67	9,946.84	-1,244.54	7.75	1,244.46	0.68	-0.15	-19.03	248.56
	NORMAL	10,181.0	0.37	222.18	10,041.82	-1,243.18	7.34	1,243.10	2.30	-1.64	-137.36	187.39
	NORMAL	10,275.0	0.18	183.83	10,135.82	-1,243.55	7.13	1,243.47	0.27	-0.20	-40.80	206.01
	NORMAL	10,370.0	0.35	224.08	10,230.82	-1,243.91	6.92	1,243.83	0.26	0.18	42.37	68.93
	NORMAL	10,465.0	0.18	283.15	10,325.82	-1,244.08	6.57	1,244.01	0.32	-0.18	62.18	149.05
	NORMAL	10,559.0	0.44	203.61	10,419.82	-1,244.38	6.28	1,244.31	0.47	0.28	-84.62	256.97
	NORMAL	10,654.0	0.53	177.59	10,514.82	-1,245.15	6.16	1,245.08	0.25	0.09	-27.39	278.87
12/22/2013	NORMAL	10,749.0	0.53	223.38	10,609.81	-1,245.91	5.87	1,245.84	0.43	0.00	48.20	112.89
	NORMAL	10,844.0	0.43	45.01	10,704.81	-1,245.98	5.82	1,245.91	1.01	-0.11	-187.76	180.73
	NORMAL	10,939.0	1.58	182.08	10,799.80	-1,247.04	6.03	1,246.97	2.02	1.21	144.28	145.85
	NORMAL	10,985.0	1.58	182.08	10,845.79	-1,248.30	5.98	1,248.23	0.00	0.00	0.00	0.00