

1 General

1.1 Customer Information

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

1.2 Well Information

Well	RGU 41-25-198	Wellbore No.	OH
Well Name	FEDERAL RGU 41-25-198	Common Name	RGU 41-25-198
Project	RG 25-01S-098W	Site	RGU 31-25-198 Pad
Vertical Section Azimuth	80.38 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	3/13/2011	UWI	RGU 41-25-198
Active Datum	KELLY BUSHING @6,661.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Cathedral
Date Started	3/13/2011	Ended	
Tool Name	MWD	Engineer	Adam Bertagnole

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 (°)
3/13/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/13/2011	NORMAL	242.0	3.80	26.10	241.82	7.20	3.53	4.68	1.57	1.57	0.00	26.10
	NORMAL	334.0	5.00	49.20	333.56	12.56	7.91	9.89	2.30	1.30	25.11	67.78
	NORMAL	426.0	6.50	59.30	425.09	17.84	15.42	18.18	1.96	1.63	10.98	39.10
	NORMAL	519.0	7.90	64.20	517.36	23.31	25.70	29.23	1.64	1.51	5.27	26.13
	NORMAL	611.0	8.40	84.20	608.45	26.74	38.08	42.01	3.11	0.54	21.74	90.00
	NORMAL	703.0	8.70	86.30	699.43	27.87	51.71	55.64	0.47	0.33	2.28	47.18
	NORMAL	796.0	9.90	85.90	791.20	28.90	66.70	70.59	1.29	1.29	-0.43	356.72
	NORMAL	890.0	10.20	84.60	883.76	30.26	83.05	86.94	0.40	0.32	-1.38	322.26
	NORMAL	984.0	10.40	84.90	976.24	31.79	99.79	103.70	0.22	0.21	0.32	15.16
	NORMAL	1,077.0	10.60	84.70	1,067.69	33.33	116.66	120.59	0.22	0.22	-0.22	349.57
	NORMAL	1,171.0	10.70	86.40	1,160.07	34.68	133.98	137.89	0.35	0.11	1.81	73.18
	NORMAL	1,266.0	11.10	87.40	1,253.35	35.65	151.92	155.74	0.47	0.42	1.05	25.79
	NORMAL	1,360.0	11.60	86.40	1,345.52	36.65	170.39	174.12	0.57	0.53	-1.06	338.02
	NORMAL	1,454.0	11.90	86.50	1,437.55	37.83	189.50	193.15	0.32	0.32	0.11	3.93
	NORMAL	1,549.0	11.70	87.30	1,530.54	38.89	208.89	212.45	0.27	-0.21	0.84	141.11
	NORMAL	1,643.0	11.40	88.00	1,622.63	39.66	227.70	231.12	0.35	-0.32	0.74	155.30
	NORMAL	1,738.0	10.60	86.90	1,715.89	40.46	245.81	249.11	0.87	-0.84	-1.16	194.16
	NORMAL	1,833.0	10.10	86.00	1,809.34	41.51	262.84	266.08	0.55	-0.53	-0.95	197.48
	NORMAL	1,927.0	9.90	83.90	1,901.91	42.95	279.10	282.35	0.44	-0.21	-2.23	240.23

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 (°)
3/13/2011	NORMAL	2,021.0	10.20	80.30	1,994.47	45.21	295.34	298.74	0.74	0.32	-3.83	293.75
	NORMAL	2,115.0	9.80	77.40	2,087.05	48.36	311.35	315.05	0.68	-0.43	-3.09	230.12
	NORMAL	2,208.0	11.50	77.20	2,178.44	52.14	328.11	332.21	1.83	1.83	-0.22	358.66
3/14/2011	NORMAL	2,303.0	11.30	77.40	2,271.57	56.26	346.43	350.96	0.21	-0.21	0.21	168.92
	NORMAL	2,397.0	11.30	76.70	2,363.74	60.39	364.38	369.35	0.15	0.00	-0.74	269.66
	NORMAL	2,490.0	11.20	76.80	2,454.96	64.55	382.04	387.46	0.11	-0.11	0.11	169.01
	NORMAL	2,584.0	11.20	76.90	2,547.17	68.70	399.82	405.68	0.02	0.00	0.11	90.05
	NORMAL	2,679.0	12.00	78.30	2,640.23	72.80	418.48	424.76	0.89	0.84	1.47	20.07
	NORMAL	2,773.0	11.00	77.70	2,732.34	76.69	436.81	443.48	1.07	-1.06	-0.64	186.53
	NORMAL	2,962.0	11.70	79.60	2,917.64	83.99	473.28	480.66	0.42	0.37	1.01	29.04
	NORMAL	3,056.0	10.50	76.90	3,009.88	87.65	491.00	498.74	1.39	-1.28	-2.87	202.10
	NORMAL	3,150.0	10.80	80.20	3,102.26	91.09	508.02	516.09	0.72	0.32	3.51	65.43
	NORMAL	3,244.0	10.50	81.80	3,194.64	93.81	525.17	533.46	0.45	-0.32	1.70	136.20
	NORMAL	3,339.0	10.00	76.70	3,288.13	96.95	541.77	550.35	1.09	-0.53	-5.37	238.65
	NORMAL	3,433.0	10.50	79.70	3,380.63	100.36	558.14	567.06	0.78	0.53	3.19	48.36
3/17/2011	NORMAL	3,527.0	12.50	80.40	3,472.74	103.58	576.60	585.80	2.13	2.13	0.74	4.33
	NORMAL	3,622.0	12.60	82.90	3,565.47	106.58	597.02	606.43	0.58	0.11	2.63	80.79
	NORMAL	3,716.0	12.20	79.80	3,657.28	109.60	616.97	626.61	0.83	-0.43	-3.30	237.49
	NORMAL	3,810.0	12.10	80.00	3,749.17	113.07	636.44	646.39	0.12	-0.11	0.21	157.27
	NORMAL	3,904.0	12.70	80.20	3,840.98	116.54	656.33	666.57	0.64	0.64	0.21	4.19
	NORMAL	3,997.0	11.90	82.90	3,931.84	119.47	675.92	686.38	1.06	-0.86	2.90	145.60
	NORMAL	4,020.0	12.00	80.90	3,954.34	120.14	680.63	691.14	1.85	0.43	-8.70	282.60
	NORMAL	4,149.0	10.10	83.50	4,080.95	123.54	705.11	715.84	1.52	-1.47	2.02	166.58
	NORMAL	4,246.0	8.83	79.51	4,176.63	125.86	720.88	731.78	1.47	-1.31	-4.11	205.36
	NORMAL	4,339.0	8.90	84.20	4,268.52	127.89	735.06	746.10	0.78	0.08	5.04	86.79
	NORMAL	4,433.0	9.00	83.50	4,361.37	129.45	749.60	760.69	0.16	0.11	-0.74	312.21
	NORMAL	4,528.0	8.80	88.70	4,455.23	130.46	764.25	775.30	0.87	-0.21	5.47	106.52
3/18/2011	NORMAL	4,623.0	10.60	75.80	4,548.88	132.77	779.99	791.21	2.96	1.89	-13.58	303.15
	NORMAL	4,717.0	11.80	75.10	4,641.09	137.36	797.66	809.40	1.28	1.28	-0.74	353.19
	NORMAL	4,811.0	11.00	79.00	4,733.23	141.54	815.75	827.93	1.18	-0.85	4.15	137.96
	NORMAL	4,906.0	12.00	81.00	4,826.33	144.82	834.40	846.87	1.13	1.05	2.11	22.72
	NORMAL	5,000.0	10.20	80.90	4,918.56	147.66	852.27	864.96	1.92	-1.91	-0.11	180.56
	NORMAL	5,094.0	11.40	85.20	5,010.90	149.76	869.75	882.54	1.54	1.28	4.57	36.00
	NORMAL	5,188.0	10.70	87.20	5,103.15	150.96	887.72	900.47	0.85	-0.74	2.13	152.27
	NORMAL	5,283.0	10.60	80.80	5,196.52	152.79	905.16	917.96	1.25	-0.11	-6.74	262.03
	NORMAL	5,377.0	10.90	85.30	5,288.87	154.90	922.55	935.46	0.95	0.32	4.79	72.55
	NORMAL	5,472.0	11.30	81.70	5,382.10	156.98	940.71	953.72	0.84	0.42	-3.79	298.22
	NORMAL	5,567.0	10.60	80.20	5,475.37	159.81	958.53	971.76	0.80	-0.74	-1.58	201.41
	NORMAL	5,766.0	10.00	81.10	5,661.32	165.31	991.87	1,005.55	0.33	-0.32	0.48	165.43
3/19/2011	NORMAL	5,850.0	11.00	78.30	5,753.75	168.39	1,008.72	1,022.67	1.19	1.06	-2.98	331.59
	NORMAL	5,945.0	9.10	79.33	5,847.28	171.62	1,024.98	1,039.24	2.01	-2.00	1.08	175.10
	NORMAL	6,039.0	9.60	80.20	5,940.04	174.33	1,040.01	1,054.52	0.55	0.53	0.93	16.21
	NORMAL	6,133.0	10.10	77.70	6,032.65	177.42	1,055.78	1,070.59	0.70	0.53	-2.66	318.22
	NORMAL	6,228.0	11.40	77.60	6,125.98	181.21	1,073.09	1,088.29	1.37	1.37	-0.11	359.13
	NORMAL	6,322.0	10.10	77.30	6,218.33	185.02	1,090.21	1,105.80	1.38	-1.38	-0.32	182.32
	NORMAL	6,416.0	8.40	84.10	6,311.11	187.53	1,105.08	1,120.88	2.15	-1.81	7.23	150.58
	NORMAL	6,511.0	8.00	87.40	6,405.14	188.55	1,118.59	1,134.37	0.65	-0.42	3.47	131.98
	NORMAL	6,606.0	8.40	90.70	6,499.16	188.76	1,132.13	1,147.75	0.65	0.42	3.47	51.28
	NORMAL	6,700.0	7.30	85.40	6,592.28	189.16	1,144.95	1,160.46	1.40	-1.17	-5.64	210.74
	NORMAL	6,795.0	7.90	81.30	6,686.45	190.63	1,157.42	1,173.00	0.85	0.63	-4.32	315.85
	NORMAL	6,890.0	7.10	76.60	6,780.64	192.98	1,169.58	1,185.38	1.06	-0.84	-4.95	215.17
	NORMAL	6,984.0	6.70	83.20	6,873.96	194.97	1,180.68	1,196.66	0.94	-0.43	7.02	120.02
3/20/2011	NORMAL	7,079.0	6.60	78.90	6,968.32	196.68	1,191.54	1,207.65	0.53	-0.11	-4.53	256.51
	NORMAL	7,173.0	7.30	77.10	7,061.63	199.05	1,202.66	1,219.01	0.78	0.74	-1.91	341.82
	NORMAL	7,268.0	7.20	77.70	7,155.87	201.67	1,214.36	1,230.99	0.13	-0.11	0.63	143.16
	NORMAL	7,362.0	6.70	76.10	7,249.18	204.24	1,225.44	1,242.34	0.57	-0.53	-1.70	200.37
	NORMAL	7,455.0	5.50	78.70	7,341.65	206.42	1,235.08	1,252.20	1.32	-1.29	2.80	168.32

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 (°)
3/20/2011	NORMAL	7,549.0	5.80	82.20	7,435.19	207.95	1,244.20	1,261.45	0.49	0.32	3.72	50.71
	NORMAL	7,642.0	4.40	85.80	7,527.82	208.85	1,252.41	1,269.70	1.54	-1.51	3.87	168.91
	NORMAL	7,736.0	2.80	81.20	7,621.63	209.46	1,258.28	1,275.59	1.73	-1.70	-4.89	187.94
	NORMAL	7,829.0	2.10	80.80	7,714.55	210.08	1,262.21	1,279.56	0.75	-0.75	-0.43	181.20
	NORMAL	7,922.0	1.40	70.70	7,807.50	210.73	1,264.96	1,282.39	0.82	-0.75	-10.86	198.79
	NORMAL	8,015.0	0.90	20.20	7,900.49	211.79	1,266.28	1,283.87	1.16	-0.54	-54.30	220.01
	NORMAL	8,108.0	0.40	47.60	7,993.48	212.69	1,266.78	1,284.51	0.62	-0.54	29.46	161.33
	NORMAL	8,202.0	0.10	165.80	8,087.48	212.84	1,267.04	1,284.79	0.48	-0.32	125.74	168.85
	NORMAL	8,295.0	1.10	72.00	8,180.47	213.03	1,267.91	1,285.68	1.19	1.08	-100.86	261.05
	NORMAL	8,389.0	1.30	75.02	8,274.45	213.59	1,269.80	1,287.63	0.22	0.21	3.21	19.06
3/22/2011	NORMAL	8,530.0	0.30	100.60	8,415.44	213.93	1,271.70	1,289.57	0.74	-0.71	18.14	172.83
	NORMAL	8,624.0	0.30	34.20	8,509.44	214.09	1,272.08	1,289.97	0.35	0.00	-70.64	236.80
	NORMAL	8,717.0	0.20	23.20	8,602.44	214.44	1,272.29	1,290.23	0.12	-0.11	-11.83	200.21
	NORMAL	8,812.0	0.50	133.00	8,697.44	214.31	1,272.65	1,290.57	0.63	0.32	115.58	128.14
	NORMAL	8,904.0	0.60	135.10	8,789.43	213.70	1,273.29	1,291.09	0.11	0.11	2.28	12.45
	NORMAL	8,997.0	1.00	108.50	8,882.42	213.09	1,274.40	1,292.09	0.58	0.43	-28.60	303.30
	NORMAL	9,090.0	0.90	152.90	8,975.41	212.19	1,275.50	1,293.03	0.78	-0.11	47.74	119.55
	NORMAL	9,184.0	0.40	160.50	9,069.40	211.22	1,275.95	1,293.30	0.54	-0.53	8.09	174.00
	NORMAL	9,277.0	0.70	56.10	9,162.40	211.23	1,276.53	1,293.88	0.96	0.32	-112.26	229.75
	NORMAL	9,376.0	0.90	85.80	9,261.39	211.62	1,277.81	1,295.20	0.46	0.20	30.00	79.61
	NORMAL	9,471.0	0.60	97.80	9,356.38	211.61	1,279.04	1,296.42	0.35	-0.32	12.63	158.28
	NORMAL	9,562.0	0.80	116.20	9,447.38	211.27	1,280.09	1,297.39	0.33	0.22	20.22	57.79
	NORMAL	9,656.0	0.90	122.90	9,541.37	210.58	1,281.29	1,298.47	0.15	0.11	7.13	48.21
	NORMAL	9,745.0	1.20	145.90	9,630.35	209.42	1,282.40	1,299.37	0.57	0.34	25.84	66.42
3/23/2011	NORMAL	9,839.0	1.40	124.40	9,724.33	207.96	1,283.90	1,300.60	0.56	0.21	-22.87	281.31
	NORMAL	9,902.0	1.60	82.10	9,787.31	207.65	1,285.41	1,302.03	1.74	0.32	-67.14	258.64
	NORMAL	9,996.0	2.20	36.70	9,881.26	209.27	1,287.79	1,304.65	1.67	0.64	-48.30	267.99
	NORMAL	10,090.0	2.40	8.20	9,975.19	212.67	1,289.15	1,306.56	1.22	0.21	-30.32	265.48
	NORMAL	10,184.0	1.80	355.10	10,069.13	216.09	1,289.30	1,307.28	0.81	-0.64	-13.94	212.24
3/24/2011	NORMAL	10,279.0	1.90	331.20	10,164.08	218.95	1,288.41	1,306.89	0.81	0.11	-25.16	265.33
	NORMAL	10,373.0	1.40	312.80	10,258.04	221.10	1,286.82	1,305.67	0.77	-0.53	-19.57	217.71
	NORMAL	10,466.0	1.60	288.30	10,351.01	222.28	1,284.75	1,303.83	0.72	0.22	-26.34	274.82
	NORMAL	10,560.0	0.90	290.10	10,444.99	222.95	1,282.82	1,302.03	0.75	-0.74	1.91	177.69
	NORMAL	10,654.0	0.80	303.40	10,538.98	223.56	1,281.57	1,300.91	0.23	-0.11	14.15	123.42
	NORMAL	10,747.0	0.90	283.50	10,631.97	224.09	1,280.32	1,299.77	0.33	0.11	-21.40	278.59
	NORMAL	10,841.0	1.10	212.50	10,725.95	223.50	1,279.12	1,298.48	1.25	0.21	-75.53	242.49
	NORMAL	10,935.0	1.20	244.90	10,819.94	222.32	1,277.74	1,296.93	0.69	0.11	34.47	97.69
	NORMAL	11,028.0	0.60	222.80	10,912.92	221.55	1,276.53	1,295.60	0.73	-0.65	-23.76	199.31
	NORMAL	11,122.0	0.40	240.40	11,006.92	221.03	1,275.91	1,294.91	0.27	-0.21	18.72	151.06
	NORMAL	11,216.0	1.10	236.10	11,100.91	220.36	1,274.88	1,293.77	0.75	0.74	-4.57	353.25
	NORMAL	11,310.0	0.10	216.40	11,194.91	219.79	1,274.08	1,292.89	1.07	-1.06	-20.96	181.92
	NORMAL	11,403.0	0.20	221.80	11,287.91	219.61	1,273.92	1,292.71	0.11	0.11	5.81	10.75
	NORMAL	11,498.0	1.10	264.80	11,382.90	219.40	1,272.90	1,291.67	1.01	0.95	45.26	51.14
	NORMAL	11,591.0	0.70	173.90	11,475.89	218.75	1,272.08	1,290.74	1.41	-0.43	-97.74	212.21
3/25/2011	NORMAL	11,685.0	0.40	232.80	11,569.89	217.99	1,271.88	1,290.42	0.64	-0.32	62.66	145.23
	NORMAL	11,780.0	0.30	247.30	11,664.89	217.69	1,271.38	1,289.88	0.14	-0.11	15.26	145.56
	NORMAL	11,874.0	0.70	191.90	11,758.88	217.03	1,271.04	1,289.43	0.62	0.43	-58.94	279.60
	NORMAL	11,968.0	0.50	154.00	11,852.88	216.10	1,271.10	1,289.34	0.46	-0.21	-40.32	225.16
	NORMAL	12,062.0	0.40	111.00	11,946.87	215.62	1,271.58	1,289.73	0.36	-0.11	-45.74	232.75
	NORMAL	12,156.0	0.50	141.60	12,040.87	215.18	1,272.14	1,290.21	0.27	0.11	32.55	83.19
	NORMAL	12,250.0	0.80	71.60	12,134.87	215.06	1,273.02	1,291.06	0.84	0.32	-74.47	253.24
	NORMAL	12,344.0	0.50	118.30	12,228.86	215.07	1,274.01	1,292.03	0.62	-0.32	49.68	141.48
	NORMAL	12,440.0	0.90	77.40	12,324.85	215.04	1,275.11	1,293.12	0.64	0.42	-42.60	287.01
	NORMAL	12,531.0	1.40	59.50	12,415.84	215.76	1,276.77	1,294.87	0.67	0.55	-19.67	315.13
3/26/2011	NORMAL	12,627.0	1.20	79.30	12,511.81	216.54	1,278.76	1,296.97	0.51	-0.21	20.62	123.68
	NORMAL	12,722.0	1.30	82.60	12,606.79	216.87	1,280.81	1,299.04	0.13	0.11	3.47	37.41
	NORMAL	12,816.0	0.30	174.50	12,700.78	216.76	1,281.89	1,300.09	1.43	-1.06	97.77	167.11

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 (°)
3/26/2011	NORMAL	12,899.0	1.00	128.50	12,783.78	216.09	1,282.48	1,300.56	0.99	0.84	-55.42	298.75
	NORMAL	12,954.0	1.00	128.50	12,838.77	215.49	1,283.23	1,301.20	0.00	0.00	0.00	0.00