

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 22-25-198	Wellbore No.	
Well Name	FEDERAL RGU 22-25-198	Common Name	RGU 22-25-198
Project	RG 25-01S-098W	Site	RGU 32-25-198 Pad
Vertical Section Azimuth	291.04 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	1/29/2012	UWI	RGU 22-25-198
Active Datum	KB @6,691.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific
Date Started	1/29/2012	Ended	
Tool Name	MWD	Engineer	Lou Cadera

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 (°)
1/29/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/29/2012	NORMAL	132.0	0.91	318.95	131.99	0.79	-0.69	0.93	0.69	0.69	0.00	318.95
	NORMAL	224.0	1.41	285.99	223.98	1.65	-2.26	2.70	0.89	0.54	-35.83	289.60
	NORMAL	316.0	2.98	277.93	315.91	2.30	-5.71	6.16	1.74	1.71	-8.76	344.83
	NORMAL	408.0	4.13	296.47	407.73	4.10	-11.05	11.78	1.75	1.25	20.15	54.50
	NORMAL	500.0	5.89	295.15	499.38	7.58	-18.29	19.79	1.92	1.91	-1.43	355.59
	NORMAL	593.0	6.98	287.62	591.79	11.32	-27.99	30.19	1.48	1.17	-8.10	318.47
	NORMAL	685.0	9.15	288.47	682.87	15.33	-40.26	43.08	2.36	2.36	0.92	3.57
	NORMAL	777.0	10.44	291.83	773.53	20.75	-54.94	58.72	1.53	1.40	3.65	25.56
1/30/2012	NORMAL	870.0	12.09	294.83	864.74	27.97	-71.60	76.87	1.88	1.77	3.23	21.03
	NORMAL	995.0	12.73	292.17	986.82	38.67	-96.23	103.70	0.69	0.51	-2.13	316.92
	NORMAL	1,089.0	12.95	288.78	1,078.47	45.97	-115.80	124.58	0.83	0.23	-3.61	284.62
	NORMAL	1,182.0	13.94	292.09	1,168.92	53.54	-136.04	146.19	1.35	1.06	3.56	39.48
	NORMAL	1,276.0	14.38	291.53	1,260.06	62.08	-157.39	169.19	0.49	0.47	-0.60	342.43
	NORMAL	1,370.0	14.50	289.83	1,351.09	70.35	-179.32	192.62	0.47	0.13	-1.81	284.98
	NORMAL	1,464.0	15.30	290.05	1,441.93	78.60	-202.04	216.79	0.85	0.85	0.23	4.15
	NORMAL	1,559.0	13.46	291.36	1,533.95	86.92	-224.12	240.38	1.97	-1.94	1.38	170.61
	NORMAL	1,652.0	13.54	292.25	1,624.38	94.99	-244.27	262.09	0.24	0.09	0.96	69.37
	NORMAL	1,742.0	13.29	290.59	1,711.93	102.61	-263.71	282.97	0.51	-0.28	-1.84	236.21
	NORMAL	1,835.0	13.23	290.39	1,802.45	110.08	-283.69	304.30	0.08	-0.06	-0.22	217.30

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 (°)
1/30/2012	NORMAL	1,929.0	13.58	290.76	1,893.89	117.74	-304.09	326.09	0.38	0.37	0.39	13.95
	NORMAL	2,022.0	14.07	291.90	1,984.19	125.83	-324.79	348.31	0.60	0.53	1.23	29.63
	NORMAL	2,116.0	13.15	292.34	2,075.55	134.15	-345.28	370.42	0.98	-0.98	0.47	173.79
	NORMAL	2,491.0	15.42	296.22	2,438.94	172.40	-429.47	462.74	0.66	0.61	1.03	24.76
	NORMAL	2,585.0	16.09	296.47	2,529.41	183.73	-452.35	488.15	0.72	0.71	0.27	5.91
	NORMAL	2,678.0	15.72	293.55	2,618.85	194.51	-475.43	513.57	0.95	-0.40	-3.14	243.79
	NORMAL	2,772.0	13.30	287.49	2,709.85	202.84	-497.42	537.08	3.04	-2.57	-6.45	209.20
	NORMAL	2,866.0	12.29	285.86	2,801.52	208.83	-517.36	557.84	1.14	-1.07	-1.73	198.87
	NORMAL	2,960.0	12.51	286.48	2,893.32	214.45	-536.74	577.95	0.27	0.23	0.66	31.48
	NORMAL	3,054.0	13.48	285.66	2,984.92	220.30	-557.06	599.01	1.05	1.03	-0.87	348.84
	NORMAL	3,147.0	13.16	284.84	3,075.41	225.93	-577.73	620.32	0.40	-0.34	-0.88	210.16
	NORMAL	3,241.0	13.31	283.67	3,166.92	231.23	-598.58	641.69	0.33	0.16	-1.24	298.68
	NORMAL	3,335.0	14.08	285.48	3,258.24	236.84	-620.12	663.81	0.94	0.82	1.93	29.98
	NORMAL	3,428.0	14.85	287.88	3,348.30	243.52	-642.36	686.96	1.05	0.83	2.58	39.07
	NORMAL	3,523.0	15.89	292.38	3,439.90	252.21	-665.98	712.12	1.67	1.09	4.74	51.10
1/31/2012	NORMAL	3,617.0	16.30	291.67	3,530.22	261.98	-690.13	738.18	0.48	0.44	-0.76	334.01
	NORMAL	3,715.0	16.36	290.03	3,624.26	271.78	-715.88	765.73	0.47	0.06	-1.67	276.63
	NORMAL	3,808.0	16.54	288.42	3,713.46	280.45	-740.75	792.05	0.53	0.19	-1.73	290.77
	NORMAL	3,902.0	16.98	288.06	3,803.46	288.94	-766.49	819.12	0.48	0.47	-0.38	346.55
3/7/2012	NORMAL	3,943.0	16.71	289.35	3,842.70	292.75	-777.74	830.99	1.12	-0.66	3.15	126.46
	NORMAL	4,082.0	13.64	284.94	3,976.85	303.60	-812.44	867.27	2.36	-2.21	-3.17	198.49
	NORMAL	4,176.0	13.97	283.27	4,068.13	309.06	-834.20	889.54	0.55	0.35	-1.78	308.82
	NORMAL	4,270.0	12.08	284.87	4,159.71	314.19	-854.75	910.56	2.05	-2.01	1.70	169.98
	NORMAL	4,363.0	10.55	285.39	4,250.90	318.94	-872.36	928.71	1.65	-1.65	0.56	176.44
	NORMAL	4,457.0	11.94	286.51	4,343.09	323.99	-889.98	946.97	1.50	1.48	1.19	9.48
	NORMAL	4,551.0	13.05	288.62	4,434.86	330.14	-909.36	967.26	1.28	1.18	2.24	23.39
	NORMAL	4,645.0	14.02	293.40	4,526.26	338.05	-929.87	989.25	1.57	1.03	5.09	51.41
3/8/2012	NORMAL	4,739.0	14.83	295.07	4,617.29	347.67	-951.22	1,012.62	0.97	0.86	1.78	28.00
	NORMAL	4,863.0	14.74	295.23	4,737.19	361.12	-979.86	1,044.19	0.08	-0.07	0.13	155.67
	NORMAL	4,927.0	13.21	292.65	4,799.29	367.41	-993.98	1,059.62	2.58	-2.39	-4.03	200.91
	NORMAL	5,021.0	12.68	291.79	4,890.90	375.37	-1,013.47	1,080.67	0.60	-0.56	-0.91	199.56
	NORMAL	5,114.0	12.89	294.70	4,981.60	383.50	-1,032.37	1,101.23	0.73	0.23	3.13	73.36
	NORMAL	5,208.0	14.47	293.60	5,072.93	392.58	-1,052.66	1,123.42	1.70	1.68	-1.17	350.12
	NORMAL	5,302.0	15.00	295.77	5,163.84	402.57	-1,074.38	1,147.28	0.81	0.56	2.31	47.21
	NORMAL	5,395.0	16.22	293.19	5,253.41	412.92	-1,097.16	1,172.25	1.51	1.31	-2.77	329.11
	NORMAL	5,489.0	14.88	294.59	5,343.96	423.11	-1,120.20	1,197.42	1.48	-1.43	1.49	165.03
	NORMAL	5,583.0	14.58	297.94	5,434.88	433.68	-1,141.63	1,221.21	0.96	-0.32	3.56	111.02
	NORMAL	5,677.0	14.98	297.41	5,525.77	444.81	-1,162.86	1,245.03	0.45	0.43	-0.56	341.07
	NORMAL	5,771.0	15.06	295.17	5,616.55	455.60	-1,184.70	1,269.29	0.62	0.09	-2.38	276.76
	NORMAL	5,865.0	13.98	295.66	5,707.55	465.71	-1,205.99	1,292.79	1.16	-1.15	0.52	173.75
	NORMAL	5,958.0	13.28	291.55	5,797.93	474.50	-1,226.05	1,314.66	1.28	-0.75	-4.42	232.16
	NORMAL	6,052.0	13.59	294.03	5,889.36	482.96	-1,246.18	1,336.49	0.70	0.33	2.64	62.96
	NORMAL	6,145.0	13.35	293.29	5,979.80	491.66	-1,266.02	1,358.13	0.32	-0.26	-0.80	215.43
	NORMAL	6,239.0	12.57	295.66	6,071.41	500.38	-1,285.21	1,379.17	1.00	-0.83	2.52	146.88
	NORMAL	6,332.0	12.92	294.67	6,162.12	509.10	-1,303.78	1,399.63	0.44	0.38	-1.06	327.55
	NORMAL	6,426.0	12.39	292.77	6,253.83	517.39	-1,322.63	1,420.20	0.72	-0.56	-2.02	217.22
	NORMAL	6,520.0	11.26	290.15	6,345.84	524.46	-1,340.54	1,439.46	1.33	-1.20	-2.79	204.14
	NORMAL	6,614.0	8.27	289.62	6,438.47	529.89	-1,355.53	1,455.40	3.18	-3.18	-0.56	181.46
3/9/2012	NORMAL	6,708.0	7.76	293.52	6,531.55	534.69	-1,367.72	1,468.49	0.79	-0.54	4.15	135.08
	NORMAL	6,802.0	8.15	290.01	6,624.64	539.50	-1,379.80	1,481.50	0.66	0.41	-3.73	307.01
	NORMAL	6,895.0	7.65	289.01	6,716.76	543.78	-1,391.84	1,494.27	0.56	-0.54	-1.08	194.88
	NORMAL	6,990.0	7.93	285.65	6,810.88	547.60	-1,404.13	1,507.12	0.56	0.29	-3.54	299.91
	NORMAL	7,085.0	8.25	288.69	6,904.94	551.55	-1,416.90	1,520.45	0.56	0.34	3.20	54.72
	NORMAL	7,179.0	8.43	291.95	6,997.95	556.29	-1,429.68	1,534.08	0.54	0.19	3.47	70.78
	NORMAL	7,274.0	7.55	289.11	7,092.02	560.94	-1,442.03	1,547.28	1.01	-0.93	-2.99	202.76
	NORMAL	7,368.0	7.10	291.17	7,185.26	565.06	-1,453.29	1,559.26	0.55	-0.48	2.19	150.75
	NORMAL	7,462.0	6.13	293.29	7,278.63	569.14	-1,463.31	1,570.09	1.06	-1.03	2.26	166.92

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 (°)
3/9/2012	NORMAL	7,557.0	5.01	296.30	7,373.18	572.98	-1,471.69	1,579.29	1.22	-1.18	3.17	166.87
	NORMAL	7,651.0	3.77	289.68	7,466.90	575.84	-1,478.28	1,586.46	1.42	-1.32	-7.04	198.95
	NORMAL	7,747.0	2.63	292.79	7,562.75	577.76	-1,483.28	1,591.82	1.20	-1.19	3.24	172.89
	NORMAL	7,841.0	1.57	294.88	7,656.69	579.14	-1,486.44	1,595.26	1.13	-1.13	2.22	176.91
	NORMAL	7,936.0	1.25	306.90	7,751.66	580.31	-1,488.45	1,597.56	0.46	-0.34	12.65	143.16
	NORMAL	8,030.0	0.64	357.90	7,845.65	581.45	-1,489.29	1,598.75	1.05	-0.65	54.26	149.58
3/10/2012	NORMAL	8,124.0	0.67	50.09	7,939.64	582.32	-1,488.89	1,598.69	0.61	0.03	55.52	113.42
	NORMAL	8,219.0	0.70	61.11	8,034.63	582.96	-1,487.95	1,598.04	0.14	0.03	11.60	82.72
	NORMAL	8,313.0	0.88	73.14	8,128.63	583.45	-1,486.76	1,597.10	0.26	0.19	12.80	48.78
	NORMAL	8,407.0	0.03	32.93	8,222.62	583.68	-1,486.05	1,596.53	0.91	-0.90	-42.78	181.29
	NORMAL	8,502.0	0.46	93.12	8,317.62	583.68	-1,485.66	1,596.16	0.47	0.45	63.36	63.54
	NORMAL	8,595.0	0.48	112.41	8,410.62	583.51	-1,484.93	1,595.42	0.17	0.02	20.74	92.51
	NORMAL	8,690.0	0.53	149.52	8,505.61	582.98	-1,484.34	1,594.68	0.34	0.05	39.06	100.16
	NORMAL	8,784.0	0.89	171.29	8,599.61	581.88	-1,484.00	1,593.97	0.47	0.38	23.16	48.06
	NORMAL	8,879.0	0.61	81.57	8,694.60	581.23	-1,483.39	1,593.17	1.13	-0.29	-94.44	214.52
	NORMAL	8,974.0	0.53	84.84	8,789.60	581.34	-1,482.46	1,592.33	0.09	-0.08	3.44	159.50
	NORMAL	9,068.0	0.34	107.90	8,883.59	581.29	-1,481.76	1,591.66	0.27	-0.20	24.53	148.48
	NORMAL	9,163.0	0.70	199.71	8,978.59	580.66	-1,481.68	1,591.37	0.83	0.38	96.64	117.36
	NORMAL	9,258.0	0.65	222.97	9,073.58	579.72	-1,482.25	1,591.56	0.29	-0.05	24.48	111.83
	NORMAL	9,352.0	0.53	225.41	9,167.58	579.02	-1,482.92	1,591.94	0.13	-0.13	2.60	169.39
3/11/2012	NORMAL	9,445.0	0.91	241.63	9,260.57	578.37	-1,483.88	1,592.59	0.46	0.41	17.44	36.48
	NORMAL	9,540.0	0.84	246.57	9,355.56	577.74	-1,485.18	1,593.58	0.11	-0.07	5.20	135.31
	NORMAL	9,635.0	0.28	231.67	9,450.56	577.32	-1,486.00	1,594.20	0.60	-0.59	-15.68	187.21
	NORMAL	9,729.0	0.62	244.71	9,544.55	576.96	-1,486.64	1,594.66	0.38	0.36	13.87	23.35
	NORMAL	9,823.0	0.35	223.61	9,638.55	576.53	-1,487.30	1,595.13	0.34	-0.29	-22.45	203.24
	NORMAL	9,917.0	0.12	204.13	9,732.55	576.23	-1,487.54	1,595.24	0.26	-0.24	-20.72	189.59
	NORMAL	10,012.0	0.43	203.54	9,827.55	575.82	-1,487.72	1,595.26	0.33	0.33	-0.62	359.18
	NORMAL	10,106.0	0.58	226.98	9,921.54	575.17	-1,488.21	1,595.49	0.27	0.16	24.94	66.12
3/12/2012	NORMAL	10,200.0	0.88	245.24	10,015.54	574.54	-1,489.21	1,596.20	0.40	0.32	19.43	47.16
	NORMAL	10,295.0	0.37	230.09	10,110.53	574.04	-1,490.11	1,596.85	0.56	-0.54	-15.95	190.48
	NORMAL	10,388.0	0.44	234.38	10,203.53	573.64	-1,490.63	1,597.20	0.08	0.08	4.61	25.58
	NORMAL	10,482.0	0.09	242.34	10,297.53	573.39	-1,490.99	1,597.44	0.37	-0.37	8.47	177.97
	NORMAL	10,576.0	0.41	235.50	10,391.53	573.17	-1,491.33	1,597.68	0.34	0.34	-7.28	351.25
	NORMAL	10,670.0	0.26	253.23	10,485.52	572.92	-1,491.81	1,598.04	0.19	-0.16	18.86	154.00
	NORMAL	10,765.0	0.21	40.90	10,580.52	572.99	-1,491.90	1,598.15	0.48	-0.05	155.44	165.60
	NORMAL	10,859.0	0.14	105.07	10,674.52	573.09	-1,491.68	1,597.98	0.21	-0.07	68.27	139.78
	NORMAL	10,954.0	0.17	2.99	10,769.52	573.20	-1,491.56	1,597.91	0.25	0.03	-107.45	223.43
	NORMAL	11,048.0	0.00	0.90	10,863.52	573.34	-1,491.55	1,597.95	0.18	-0.18	0.00	180.00
	NORMAL	11,140.0	0.52	203.32	10,955.52	572.95	-1,491.72	1,597.97	0.57	0.57	0.00	203.32
3/13/2012	NORMAL	11,234.0	0.62	239.59	11,049.52	572.30	-1,492.33	1,598.30	0.39	0.11	38.59	93.14
	NORMAL	11,329.0	0.75	28.06	11,144.52	572.59	-1,492.48	1,598.55	1.39	0.14	156.28	162.70
	NORMAL	11,424.0	1.23	52.49	11,239.50	573.76	-1,491.38	1,597.94	0.66	0.51	25.72	53.98
	NORMAL	11,519.0	1.24	47.80	11,334.48	575.07	-1,489.81	1,596.94	0.11	0.01	-4.94	273.30
	NORMAL	11,613.0	1.38	46.21	11,428.45	576.54	-1,488.24	1,596.00	0.15	0.15	-1.69	344.65
	NORMAL	11,707.0	1.23	44.05	11,522.43	578.05	-1,486.72	1,595.13	0.17	-0.16	-2.30	197.08
	NORMAL	11,801.0	0.88	8.81	11,616.41	579.49	-1,485.91	1,594.89	0.77	-0.37	-37.49	224.80
	NORMAL	11,894.0	0.96	357.57	11,709.40	580.97	-1,485.83	1,595.35	0.21	0.09	-12.09	288.22
	NORMAL	11,989.0	0.84	356.67	11,804.39	582.46	-1,485.90	1,595.95	0.13	-0.13	-0.95	186.27
	NORMAL	12,083.0	0.52	347.36	11,898.38	583.56	-1,486.04	1,596.47	0.36	-0.34	-9.90	194.43
	NORMAL	12,178.0	0.88	228.47	11,993.38	583.50	-1,486.68	1,597.05	1.28	0.38	-125.15	219.19
	NORMAL	12,272.0	0.86	323.26	12,087.37	583.59	-1,487.64	1,597.98	1.36	-0.02	100.84	138.00
3/14/2012	NORMAL	12,367.0	0.69	320.39	12,182.36	584.60	-1,488.43	1,599.08	0.18	-0.18	-3.02	191.43
	NORMAL	12,461.0	0.86	324.12	12,276.36	585.61	-1,489.20	1,600.16	0.19	0.18	3.97	18.40
	NORMAL	12,555.0	1.10	314.69	12,370.34	586.81	-1,490.26	1,601.58	0.31	0.26	-10.03	321.32
	NORMAL	12,649.0	1.36	301.66	12,464.32	588.03	-1,491.85	1,603.50	0.40	0.28	-13.86	306.27
	NORMAL	12,744.0	1.49	294.28	12,559.29	589.13	-1,493.94	1,605.85	0.24	0.14	-7.77	301.59
	NORMAL	12,897.0	1.99	278.46	12,712.22	590.34	-1,498.38	1,610.42	0.45	0.33	-10.34	308.06

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/14/2012	NORMAL	12,952.0	1.99	278.46	12,767.19	590.62	-1,500.27	1,612.29	0.00	0.00	0.00	0.00