

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	GM 441-12	Wellbore No.	1
Well Name	GM 441-12	Common Name	GM 441-12
Project	GV 01-07S-096W	Site	GM 44-1 Pad
Vertical Section Azimuth	191.26 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	11/19/2012	UWI	GM 441-12
Active Datum	KB @5,230.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	11/19/2012	Ended	
Tool Name	GMS	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

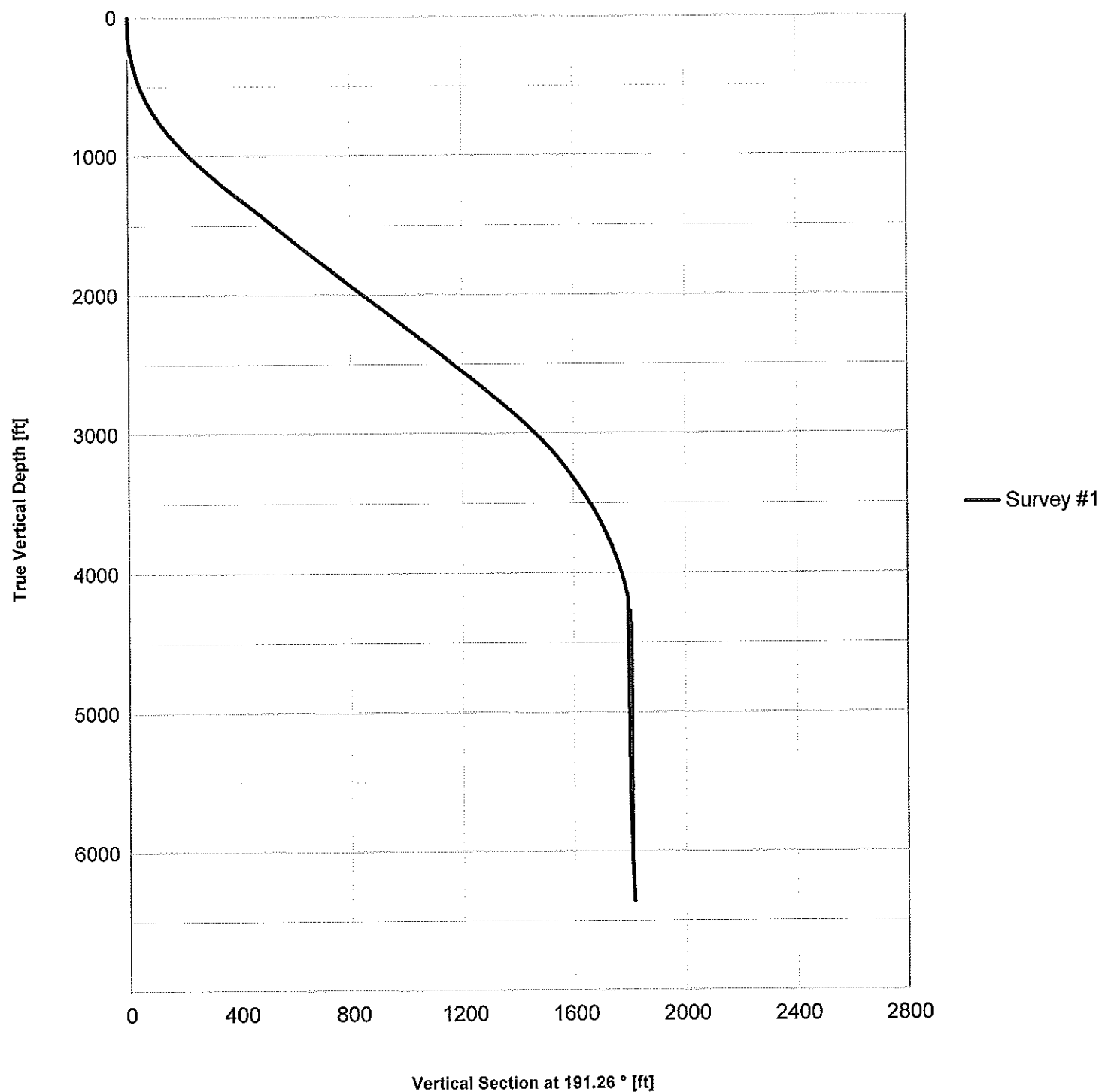
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
11/19/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/19/2012	NORMAL	105.0	0.97	229.83	104.99	-0.57	-0.68	0.69	0.92	0.92	0.00	229.83
	NORMAL	166.0	3.61	223.33	165.94	-2.30	-2.39	2.73	4.34	4.33	-10.66	351.13
	NORMAL	257.0	5.89	215.07	256.62	-8.21	-7.04	9.43	2.61	2.51	-9.08	339.16
	NORMAL	347.0	7.30	209.00	346.03	-16.99	-12.47	19.10	1.75	1.57	-6.74	330.65
	NORMAL	438.0	9.24	198.28	436.08	-28.99	-17.56	31.86	2.71	2.13	-11.78	316.13
	NORMAL	516.0	11.43	196.52	512.81	-42.34	-21.72	45.77	2.84	2.81	-2.26	350.93
11/20/2012	NORMAL	607.0	14.70	196.51	601.44	-62.06	-27.57	66.25	3.59	3.59	-0.01	359.96
	NORMAL	697.0	17.23	194.58	687.97	-85.92	-34.17	90.94	2.87	2.81	-2.14	347.22
	NORMAL	788.0	20.38	193.49	774.10	-114.38	-41.26	120.23	3.48	3.46	-1.20	353.12
	NORMAL	880.0	23.10	192.87	859.55	-147.55	-49.02	154.28	2.97	2.96	-0.67	354.89
	NORMAL	970.0	25.46	191.95	941.58	-183.70	-56.96	191.28	2.66	2.62	-1.02	350.47
	NORMAL	1,064.0	27.61	191.95	1,025.67	-224.78	-65.66	233.27	2.29	2.29	0.00	0.00
	NORMAL	1,157.0	29.61	192.00	1,107.31	-268.34	-74.90	277.80	2.15	2.15	0.05	0.71
	NORMAL	1,251.0	31.54	191.23	1,188.24	-315.17	-84.51	325.61	2.10	2.05	-0.82	348.20
	NORMAL	1,310.0	32.73	190.91	1,238.20	-345.97	-90.54	356.99	2.04	2.02	-0.54	351.72
11/21/2012	NORMAL	1,431.0	33.31	189.85	1,339.66	-410.83	-102.41	422.92	0.68	0.48	-0.88	314.67
11/22/2012	NORMAL	1,525.0	31.30	189.12	1,419.10	-460.37	-110.70	473.12	2.18	-2.14	-0.78	190.68
	NORMAL	1,619.0	32.27	188.84	1,499.01	-509.28	-118.43	522.60	1.04	1.03	-0.30	351.24
	NORMAL	1,713.0	31.77	190.26	1,578.71	-558.42	-126.69	572.41	0.96	-0.53	1.51	124.19
	NORMAL	1,807.0	32.28	190.09	1,658.40	-607.49	-135.49	622.25	0.55	0.54	-0.18	349.90

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 (°)
11/22/2012	NORMAL	1,901.0	33.02	191.71	1,737.55	-657.28	-145.09	672.96	1.22	0.79	1.72	50.43
	NORMAL	1,995.0	32.93	192.05	1,816.41	-707.35	-155.62	724.12	0.22	-0.10	0.36	116.08
	NORMAL	2,090.0	33.47	191.91	1,895.90	-758.23	-166.42	776.13	0.57	0.57	-0.15	351.86
	NORMAL	2,185.0	33.09	191.01	1,975.32	-809.32	-176.78	828.26	0.66	-0.40	-0.95	232.05
	NORMAL	2,280.0	32.85	190.13	2,055.02	-860.14	-186.26	879.95	0.56	-0.25	-0.93	243.01
	NORMAL	2,372.0	33.28	189.41	2,132.12	-909.61	-194.78	930.13	0.63	0.47	-0.78	317.28
	NORMAL	2,466.0	32.40	191.75	2,211.10	-959.71	-204.12	981.09	1.64	-0.94	2.49	125.72
	NORMAL	2,559.0	32.73	191.66	2,289.48	-1,008.72	-214.28	1,031.15	0.36	0.35	-0.10	351.61
	NORMAL	2,653.0	33.02	191.93	2,368.43	-1,058.67	-224.71	1,082.17	0.35	0.31	0.29	26.92
	NORMAL	2,747.0	32.76	191.84	2,447.36	-1,108.62	-235.22	1,133.21	0.28	-0.28	-0.10	190.61
	NORMAL	2,840.0	32.36	189.43	2,525.74	-1,157.80	-244.46	1,183.25	1.46	-0.43	-2.59	251.85
	NORMAL	2,933.0	32.26	188.88	2,604.35	-1,206.88	-252.37	1,232.93	0.33	-0.11	-0.59	250.98
	NORMAL	3,028.0	31.82	187.98	2,684.88	-1,256.73	-259.76	1,283.26	0.68	-0.46	-0.95	226.96
	NORMAL	3,122.0	31.39	188.92	2,764.93	-1,305.46	-267.00	1,332.46	0.70	-0.46	1.00	131.52
	NORMAL	3,215.0	29.74	190.45	2,845.01	-1,352.07	-274.94	1,379.73	1.96	-1.77	1.65	155.41
	NORMAL	3,309.0	27.97	189.55	2,927.34	-1,396.74	-282.83	1,425.08	1.94	-1.88	-0.96	193.39
	NORMAL	3,403.0	26.67	189.97	3,010.85	-1,439.26	-290.14	1,468.21	1.40	-1.38	0.45	171.75
	NORMAL	3,497.0	25.03	189.66	3,095.44	-1,479.64	-297.13	1,509.18	1.75	-1.74	-0.33	184.57
	NORMAL	3,590.0	22.44	188.86	3,180.57	-1,516.58	-303.16	1,546.58	2.81	-2.78	-0.86	186.72
	NORMAL	3,685.0	20.63	190.45	3,268.93	-1,550.96	-308.99	1,581.44	2.00	-1.91	1.67	162.87
	NORMAL	3,779.0	18.92	190.50	3,357.39	-1,582.23	-314.77	1,613.24	1.82	-1.82	0.05	179.46
	NORMAL	3,873.0	17.76	189.46	3,446.61	-1,611.36	-319.91	1,642.80	1.28	-1.23	-1.11	195.26
	NORMAL	3,967.0	16.00	191.09	3,536.56	-1,638.21	-324.75	1,670.09	1.94	-1.87	1.73	165.73
11/23/2012	NORMAL	4,061.0	14.69	190.90	3,627.20	-1,662.63	-329.50	1,694.97	1.39	-1.39	-0.20	182.11
	NORMAL	4,154.0	12.95	190.30	3,717.51	-1,684.46	-333.59	1,717.18	1.88	-1.87	-0.65	184.42
	NORMAL	4,247.0	11.88	191.16	3,808.33	-1,704.11	-337.31	1,737.17	1.17	-1.15	0.92	170.62
	NORMAL	4,341.0	10.09	189.47	3,900.61	-1,721.73	-340.54	1,755.08	1.93	-1.90	-1.80	189.37
	NORMAL	4,436.0	8.81	189.91	3,994.32	-1,737.10	-343.16	1,770.67	1.35	-1.35	0.46	176.99
	NORMAL	4,530.0	7.34	191.25	4,087.38	-1,750.08	-345.57	1,783.87	1.58	-1.56	1.43	173.37
	NORMAL	4,624.0	5.87	189.43	4,180.76	-1,760.71	-347.53	1,794.68	1.58	-1.56	-1.94	187.20
	NORMAL	4,719.0	4.13	193.71	4,275.39	-1,768.83	-349.14	1,802.95	1.87	-1.83	4.51	170.03
	NORMAL	4,811.0	1.01	178.95	4,367.29	-1,772.86	-349.91	1,807.06	3.44	-3.39	-16.04	184.67
	NORMAL	4,904.0	0.78	77.62	4,460.28	-1,773.54	-349.27	1,807.60	1.50	-0.25	-108.96	213.33
	NORMAL	4,997.0	0.46	105.86	4,553.27	-1,773.51	-348.29	1,807.38	0.47	-0.34	30.37	149.85
	NORMAL	5,092.0	0.68	15.08	4,648.27	-1,773.07	-347.78	1,806.85	0.87	0.23	-95.56	235.39
	NORMAL	5,186.0	0.76	15.07	4,742.26	-1,771.93	-347.47	1,805.67	0.09	0.09	-0.01	359.91
	NORMAL	5,281.0	0.20	336.11	4,837.26	-1,771.17	-347.38	1,804.91	0.65	-0.59	-41.01	191.75
	NORMAL	5,375.0	0.14	321.50	4,931.26	-1,770.93	-347.52	1,804.70	0.08	-0.06	-15.54	208.69
	NORMAL	5,468.0	0.94	257.86	5,024.26	-1,771.00	-348.33	1,804.93	0.95	0.86	-68.43	288.23
11/24/2012	NORMAL	5,561.0	0.86	333.29	5,117.25	-1,770.54	-349.39	1,804.68	1.19	-0.09	81.11	131.00
	NORMAL	5,656.0	0.44	28.43	5,212.24	-1,769.58	-349.54	1,803.77	0.74	-0.44	58.04	149.32
	NORMAL	5,751.0	0.54	50.33	5,307.24	-1,768.97	-349.02	1,803.07	0.22	0.11	23.05	73.14
	NORMAL	5,846.0	0.30	68.38	5,402.24	-1,768.60	-348.44	1,802.59	0.29	-0.25	19.00	159.95
	NORMAL	5,940.0	0.38	73.32	5,496.23	-1,768.42	-347.92	1,802.31	0.09	0.09	5.26	22.61
	NORMAL	6,034.0	0.56	112.02	5,590.23	-1,768.50	-347.19	1,802.25	0.38	0.19	41.17	80.75
	NORMAL	6,129.0	0.85	140.36	5,685.22	-1,769.22	-346.31	1,802.78	0.47	0.31	29.83	65.00
	NORMAL	6,223.0	1.00	163.51	5,779.21	-1,770.54	-345.63	1,803.95	0.42	0.16	24.63	79.98
	NORMAL	6,317.0	0.98	190.58	5,873.20	-1,772.12	-345.55	1,805.48	0.49	-0.02	28.80	105.94
	NORMAL	6,409.0	0.96	236.17	5,965.19	-1,773.32	-346.33	1,806.81	0.82	-0.02	49.55	114.20
	NORMAL	6,503.0	1.31	232.65	6,059.17	-1,774.41	-347.84	1,808.17	0.38	0.37	-3.74	346.97
	NORMAL	6,599.0	1.76	228.16	6,155.13	-1,776.06	-349.81	1,810.18	0.48	0.47	-4.68	342.78
	NORMAL	6,692.0	2.11	230.92	6,248.08	-1,778.09	-352.21	1,812.64	0.39	0.38	2.97	16.29
	NORMAL	6,735.0	2.12	231.82	6,291.05	-1,779.08	-353.45	1,813.85	0.08	0.02	2.09	73.69
	NORMAL	6,800.0	2.14	233.18	6,356.01	-1,780.55	-355.36	1,815.67	0.08	0.03	2.09	69.09

3 Charts

3.1 Vertical Section View



3.2 Plan View

