

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	GM 22-23	Wellbore No.	
Well Name	GM 22-23	Common Name	GM 22-23
Project	GV 23-06S-096W	Site	MV 10-23 Pad
Vertical Section	26.37 (°)	North Reference	True
Azimuth		Origin E/W	
Origin N/S		UWI	GM 22-23
Spud Date	8/7/2011		
Active Datum	KB @6,002.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Started	8/7/2011	Ended	
Tool Name	MWD	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)	DLeg (°/100ft)	Bulld (°/100ft)	Turn (°/100ft)	TFace (°)
8/7/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/7/2011	NORMAL	82.0	0.53	227.37	82.00	-0.26	-0.28	-0.35	0.65	0.65	0.00	227.37
	NORMAL	177.0	3.70	27.25	176.94	2.17	0.80	2.30	4.42	3.34	168.29	162.36
	NORMAL	269.0	6.25	25.49	268.59	9.33	4.32	10.28	2.78	2.77	-1.91	355.70
	NORMAL	360.0	8.89	28.30	358.79	20.00	9.78	22.26	2.93	2.90	3.09	9.38
	NORMAL	430.0	11.03	26.14	427.73	30.77	15.30	34.36	3.10	3.06	-3.09	349.03
	NORMAL	522.0	13.17	26.53	517.68	48.05	23.86	53.65	2.33	2.33	0.42	2.38
	NORMAL	613.0	16.64	25.26	605.60	69.12	34.05	77.05	3.83	3.81	-1.40	354.01
	NORMAL	705.0	21.05	26.10	692.65	95.88	46.95	106.76	4.80	4.79	0.91	3.92
	NORMAL	796.0	23.89	26.97	776.73	126.99	62.50	141.53	3.14	3.12	0.96	7.08
	NORMAL	887.0	26.27	25.92	859.15	161.53	79.66	180.10	2.66	2.62	-1.15	348.93
	NORMAL	918.0	27.79	26.19	886.76	174.18	85.85	194.19	4.92	4.90	0.87	4.74
8/8/2011	NORMAL	1,068.0	29.23	25.63	1,018.57	238.58	117.12	265.78	0.98	0.96	-0.37	349.24
	NORMAL	1,164.0	28.53	26.86	1,102.63	280.17	137.62	312.14	0.96	-0.73	1.28	140.22
	NORMAL	1,260.0	28.45	26.87	1,187.00	321.02	158.32	357.93	0.08	-0.08	0.01	176.59
	NORMAL	1,355.0	28.80	26.22	1,270.39	361.73	178.65	403.45	0.49	0.37	-0.68	318.05
	NORMAL	1,450.0	27.49	26.49	1,354.16	401.89	198.54	448.26	1.39	-1.38	0.28	174.57
	NORMAL	1,546.0	27.44	26.63	1,439.34	441.49	218.34	492.53	0.09	-0.05	0.15	127.82
	NORMAL	1,642.0	27.56	26.70	1,524.49	481.10	238.23	536.86	0.13	0.12	0.07	15.11
	NORMAL	1,737.0	27.82	26.09	1,608.61	520.65	257.86	581.00	0.40	0.27	-0.64	312.26
	NORMAL	1,833.0	27.79	25.81	1,693.53	560.91	277.45	625.78	0.14	-0.03	-0.29	256.94

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
8/8/2011	NORMAL	1,927.0	27.58	25.63	1,776.76	600.26	296.41	669.45	0.24	-0.22	-0.19	201.63
	NORMAL	2,022.0	26.75	25.96	1,861.28	639.31	315.28	712.82	0.89	-0.87	0.35	169.86
	NORMAL	2,118.0	27.14	26.02	1,946.86	678.41	334.34	756.32	0.41	0.41	0.06	4.01
8/9/2011	NORMAL	2,214.0	27.57	24.94	2,032.13	718.23	353.32	800.43	0.68	0.45	-1.13	310.43
	NORMAL	2,309.0	28.23	23.73	2,116.09	758.74	371.63	844.85	0.92	0.69	-1.27	318.84
	NORMAL	2,405.0	28.30	25.60	2,200.64	800.05	390.60	890.29	0.93	0.07	1.95	86.30
	NORMAL	2,499.0	26.91	27.25	2,283.94	839.05	409.97	933.84	1.69	-1.48	1.76	151.92
	NORMAL	2,593.0	27.08	27.07	2,367.70	877.02	429.44	976.50	0.20	0.18	-0.19	334.25
	NORMAL	2,688.0	26.60	27.33	2,452.46	915.17	449.05	1,019.39	0.52	-0.51	0.27	166.37
	NORMAL	2,783.0	25.78	26.91	2,537.71	952.48	468.16	1,061.31	0.88	-0.86	-0.44	192.55
	NORMAL	2,879.0	26.59	27.19	2,623.86	990.21	487.43	1,103.67	0.85	0.84	0.29	8.80
	NORMAL	2,975.0	26.20	27.42	2,709.85	1,028.13	507.01	1,146.34	0.42	-0.41	0.24	165.41
	NORMAL	3,068.0	27.35	27.03	2,792.88	1,065.39	526.17	1,188.23	1.25	1.24	-0.42	351.14
	NORMAL	3,161.0	27.17	26.67	2,875.55	1,103.39	545.41	1,230.83	0.26	-0.19	-0.39	222.33
	NORMAL	3,256.0	25.57	27.20	2,960.66	1,141.01	564.52	1,273.02	1.70	-1.68	0.56	171.87
	NORMAL	3,351.0	26.43	27.46	3,046.04	1,178.01	583.64	1,314.66	0.91	0.91	0.27	7.67
	NORMAL	3,447.0	28.30	27.11	3,131.30	1,217.22	603.86	1,358.78	1.96	1.95	-0.36	354.93
	NORMAL	3,542.0	27.44	27.42	3,215.28	1,256.70	624.20	1,403.18	0.92	-0.91	0.33	170.57
	NORMAL	3,638.0	28.40	26.02	3,300.10	1,296.85	644.41	1,448.13	1.21	1.00	-1.46	325.05
	NORMAL	3,733.0	28.58	26.58	3,383.60	1,337.47	664.48	1,493.44	0.34	0.19	0.59	56.27
	NORMAL	3,829.0	28.17	25.90	3,468.07	1,378.39	684.66	1,539.07	0.54	-0.43	-0.71	217.95
	NORMAL	3,923.0	28.46	26.24	3,550.82	1,418.44	704.25	1,583.65	0.35	0.31	0.36	29.23
	NORMAL	4,018.0	28.29	26.29	3,634.41	1,458.93	724.23	1,628.80	0.18	-0.18	0.05	172.06
	NORMAL	4,113.0	28.62	25.72	3,717.93	1,499.61	744.08	1,674.06	0.45	0.35	-0.60	320.30
	NORMAL	4,209.0	27.26	27.07	3,802.74	1,539.91	764.06	1,719.04	1.56	-1.42	1.41	155.65
	NORMAL	4,304.0	26.27	27.76	3,887.56	1,577.88	783.75	1,761.81	1.09	-1.04	0.73	162.88
	NORMAL	4,398.0	25.21	29.00	3,972.23	1,613.80	803.15	1,802.61	1.26	-1.13	1.32	153.63
	NORMAL	4,493.0	24.73	29.13	4,058.35	1,648.86	822.63	1,842.67	0.51	-0.51	0.14	173.54
	NORMAL	4,587.0	23.83	29.27	4,144.03	1,682.60	841.49	1,881.27	0.96	-0.96	0.15	176.40
8/10/2011	NORMAL	4,683.0	22.02	27.56	4,232.45	1,715.47	859.30	1,918.64	2.01	-1.89	-1.78	199.42
	NORMAL	4,779.0	19.79	25.93	4,322.13	1,746.04	874.73	1,952.89	2.40	-2.32	-1.70	193.86
	NORMAL	4,874.0	18.67	27.17	4,411.82	1,774.04	888.71	1,984.17	1.25	-1.18	1.31	160.55
	NORMAL	4,970.0	17.07	27.12	4,503.19	1,800.25	902.15	2,013.63	1.67	-1.67	-0.05	180.53
	NORMAL	5,065.0	15.45	26.59	4,594.39	1,823.98	914.17	2,040.22	1.71	-1.71	-0.56	184.98
	NORMAL	5,161.0	14.72	25.57	4,687.08	1,846.41	925.16	2,065.21	0.81	-0.76	-1.06	199.49
	NORMAL	5,257.0	13.54	27.51	4,780.17	1,867.38	935.61	2,088.64	1.32	-1.23	2.02	159.07
	NORMAL	5,352.0	11.83	28.14	4,872.85	1,885.84	945.34	2,109.49	1.81	-1.80	0.66	175.68
	NORMAL	5,447.0	10.46	27.25	4,966.06	1,902.09	953.88	2,127.85	1.45	-1.44	-0.94	186.72
8/11/2011	NORMAL	5,543.0	9.69	24.14	5,060.58	1,917.21	961.18	2,144.64	0.98	-0.80	-3.24	213.72
	NORMAL	5,639.0	9.43	22.01	5,155.24	1,931.87	967.43	2,160.55	0.46	-0.27	-2.22	232.64
	NORMAL	5,734.0	8.09	23.03	5,249.13	1,945.24	972.96	2,174.99	1.42	-1.41	1.07	173.89
	NORMAL	5,830.0	7.03	26.91	5,344.30	1,956.70	978.26	2,187.60	1.22	-1.10	4.04	156.20
	NORMAL	5,925.0	6.33	25.40	5,438.65	1,966.61	983.14	2,198.65	0.76	-0.74	-1.59	193.34
	NORMAL	6,020.0	5.57	28.75	5,533.14	1,975.39	987.61	2,208.50	0.88	-0.80	3.53	157.10
	NORMAL	6,116.0	4.75	32.34	5,628.75	1,982.83	991.97	2,217.10	0.92	-0.85	3.74	160.29
8/12/2011	NORMAL	6,212.0	3.08	34.54	5,724.52	1,988.31	995.56	2,223.61	1.75	-1.74	2.29	175.96
	NORMAL	6,307.0	0.64	339.80	5,819.47	1,990.91	996.83	2,226.50	2.91	-2.57	-57.62	190.92
	NORMAL	6,403.0	1.64	259.24	5,915.45	1,991.16	995.29	2,226.04	1.73	1.04	-83.92	257.09
	NORMAL	6,499.0	1.32	269.47	6,011.42	1,990.89	992.84	2,224.71	0.43	-0.33	10.66	145.49
	NORMAL	6,594.0	0.53	290.83	6,106.41	1,991.04	991.33	2,224.18	0.89	-0.83	22.48	166.85
	NORMAL	6,689.0	1.39	203.07	6,201.40	1,990.13	990.47	2,222.98	1.55	0.91	-92.38	251.10
	NORMAL	6,784.0	1.85	201.14	6,296.36	1,987.64	989.46	2,220.31	0.49	0.48	-2.03	352.27
	NORMAL	6,879.0	1.18	199.79	6,391.33	1,985.29	988.58	2,217.81	0.71	-0.71	-1.42	182.37
	NORMAL	6,974.0	1.16	205.22	6,486.31	1,983.50	987.84	2,215.87	0.12	-0.02	5.72	102.93
	NORMAL	7,070.0	0.70	204.96	6,582.29	1,982.09	987.18	2,214.32	0.48	-0.48	-0.27	180.40
8/13/2011	NORMAL	7,165.0	1.10	207.93	6,677.28	1,980.76	986.51	2,212.82	0.42	0.42	3.13	8.14
	NORMAL	7,259.0	1.35	200.00	6,771.26	1,978.92	985.70	2,210.82	0.32	0.27	-8.44	321.85

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
8/13/2011	NORMAL	7,355.0	1.22	214.73	6,867.24	1,977.02	984.73	2,208.69	0.37	-0.14	15.34	118.74
	NORMAL	7,450.0	1.23	249.26	6,962.22	1,975.83	983.21	2,206.94	0.77	0.01	36.35	106.51
	NORMAL	7,545.0	2.02	237.13	7,057.18	1,974.56	980.85	2,204.75	0.90	0.83	-12.77	330.33
	NORMAL	7,640.0	2.18	234.83	7,152.11	1,972.61	977.96	2,201.73	0.19	0.17	-2.42	331.07
8/14/2011	NORMAL	7,736.0	1.93	251.01	7,248.05	1,971.03	974.94	2,198.97	0.66	-0.26	16.85	121.26
	NORMAL	7,830.0	2.20	264.29	7,341.99	1,970.34	971.65	2,196.89	0.58	0.29	14.13	67.31
	NORMAL	7,926.0	2.55	273.60	7,437.91	1,970.29	967.68	2,195.08	0.54	0.36	9.70	52.50
	NORMAL	8,019.0	2.81	268.94	7,530.81	1,970.37	963.34	2,193.23	0.36	0.28	-5.01	317.69
	NORMAL	8,114.0	2.99	270.70	7,625.69	1,970.36	958.53	2,191.08	0.21	0.19	1.85	27.20
	NORMAL	8,175.0	3.17	269.30	7,686.60	1,970.36	955.26	2,189.63	0.32	0.30	-2.30	336.62
	NORMAL	8,232.0	3.17	269.30	7,743.51	1,970.32	952.11	2,188.19	0.00	0.00	0.00	0.00
	NORMAL											