

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	GM 512-23	Wellbore No.	
Well Name	GM 512-23	Common Name	GM 512-23
Project	GV 23-06S-096W	Site	MV 10-23 Pad
Vertical Section Azimuth	328.12 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	7/23/2011	UWI	GM 512-23
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	7/23/2011	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 (°)
7/23/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/23/2011	NORMAL	83.0	0.62	178.24	83.00	-0.45	0.01	-0.39	0.75	0.75	0.00	178.24
	NORMAL	178.0	1.23	312.63	177.99	-0.27	-0.72	0.15	1.81	0.64	141.46	149.30
	NORMAL	269.0	2.38	317.20	268.95	1.78	-2.72	2.95	1.27	1.26	5.02	9.42
	NORMAL	361.0	3.70	330.12	360.81	5.75	-5.50	7.79	1.61	1.43	14.04	33.98
	NORMAL	452.0	5.89	323.70	451.49	12.06	-9.73	15.38	2.47	2.41	-7.05	343.02
	NORMAL	544.0	8.01	324.84	542.81	21.11	-16.21	26.49	2.31	2.30	1.24	4.29
	NORMAL	639.0	9.85	325.46	636.65	33.21	-24.63	41.21	1.94	1.94	0.65	3.30
	NORMAL	735.0	12.05	323.96	730.90	48.08	-35.19	59.41	2.31	2.29	-1.56	351.88
	NORMAL	809.0	13.13	326.35	803.12	61.32	-44.39	75.52	1.62	1.46	3.23	26.92
	NORMAL	905.0	15.12	329.16	896.22	81.15	-56.85	98.94	2.19	2.07	2.93	20.38
	NORMAL	924.0	15.48	329.69	914.54	85.47	-59.40	103.95	2.03	1.89	2.79	21.49
7/24/2011	NORMAL	1,006.0	16.62	330.48	993.34	105.12	-70.70	126.61	1.42	1.39	0.96	11.23
	NORMAL	1,070.0	17.07	329.48	1,054.60	121.18	-79.98	145.14	0.84	0.70	-1.56	326.74
	NORMAL	1,165.0	17.55	328.90	1,145.30	145.45	-94.46	173.40	0.54	0.51	-0.61	339.95
	NORMAL	1,261.0	16.00	330.30	1,237.21	169.34	-108.49	201.10	1.67	-1.61	1.46	166.06
	NORMAL	1,357.0	15.73	331.81	1,329.55	192.30	-121.20	227.31	0.51	-0.28	1.57	123.91
	NORMAL	1,452.0	14.65	330.65	1,421.23	214.13	-133.17	252.16	1.18	-1.14	-1.22	195.16
	NORMAL	1,547.0	13.82	327.92	1,513.31	234.21	-145.08	275.51	1.12	-0.87	-2.87	217.65
	NORMAL	1,643.0	13.81	328.19	1,606.54	253.66	-157.21	298.43	0.07	-0.01	0.28	98.95
	NORMAL	1,739.0	13.39	329.63	1,699.85	272.99	-168.87	321.00	0.56	-0.44	1.50	141.82

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 (°)
7/24/2011	NORMAL	1,835.0	13.71	325.39	1,793.18	291.95	-180.95	343.48	1.09	0.33	-4.42	285.79
	NORMAL	1,928.0	14.22	323.97	1,883.43	310.25	-193.93	365.88	0.66	0.55	-1.53	325.41
	NORMAL	2,024.0	13.46	322.97	1,976.64	328.71	-207.60	388.77	0.83	-0.79	-1.04	196.99
	NORMAL	2,119.0	14.31	326.47	2,068.86	347.32	-220.74	411.51	1.26	0.89	3.68	46.37
	NORMAL	2,215.0	13.84	325.20	2,161.98	366.64	-233.85	434.84	0.59	-0.49	-1.32	212.70
	NORMAL	2,311.0	14.44	326.63	2,255.07	386.07	-246.98	458.27	0.72	0.63	1.49	30.90
	NORMAL	2,406.0	13.98	325.00	2,347.17	405.36	-260.08	481.57	0.64	-0.48	-1.72	220.23
	NORMAL	2,501.0	13.72	329.46	2,439.41	424.46	-272.39	504.29	1.16	-0.27	4.69	105.85
	NORMAL	2,594.0	14.52	329.58	2,529.60	444.02	-283.90	526.98	0.86	0.86	0.13	2.15
	NORMAL	2,690.0	14.19	329.36	2,622.60	464.52	-295.99	550.77	0.35	-0.34	-0.23	189.28
	NORMAL	2,785.0	15.79	329.05	2,714.36	485.62	-308.57	575.34	1.69	1.68	-0.33	356.98
	NORMAL	2,880.0	16.15	329.67	2,805.70	508.11	-321.89	601.47	0.42	0.38	0.65	25.65
	NORMAL	2,976.0	14.55	330.54	2,898.27	530.14	-334.56	626.86	1.68	-1.67	0.91	172.23
	NORMAL	3,070.0	13.65	329.60	2,989.44	549.98	-345.98	649.75	0.99	-0.96	-1.00	193.82
7/25/2011	NORMAL	3,162.0	14.07	327.49	3,078.76	568.78	-357.48	671.78	0.71	0.46	-2.29	308.70
	NORMAL	3,257.0	15.16	328.47	3,170.68	589.10	-370.19	695.75	1.18	1.15	1.03	13.26
	NORMAL	3,353.0	14.91	328.67	3,263.40	610.35	-383.17	720.66	0.27	-0.26	0.21	168.37
	NORMAL	3,448.0	14.71	327.67	3,355.24	630.99	-395.98	744.94	0.34	-0.21	-1.05	231.48
	NORMAL	3,544.0	14.07	325.91	3,448.23	650.95	-409.04	768.79	0.81	-0.67	-1.83	213.50
	NORMAL	3,639.0	15.12	327.23	3,540.16	670.93	-422.22	792.72	1.16	1.11	1.39	18.22
	NORMAL	3,735.0	15.56	331.05	3,632.74	692.73	-435.23	818.09	1.15	0.46	3.98	68.32
	NORMAL	3,830.0	15.50	332.17	3,724.28	715.10	-447.32	843.48	0.32	-0.06	1.18	101.85
	NORMAL	3,924.0	14.99	331.65	3,814.97	736.91	-458.96	868.14	0.56	-0.54	-0.55	194.76
	NORMAL	4,020.0	14.85	331.33	3,907.73	758.63	-470.75	892.82	0.17	-0.15	-0.33	210.32
	NORMAL	4,115.0	14.49	331.07	3,999.63	779.71	-482.34	916.84	0.39	-0.38	-0.27	190.24
	NORMAL	4,211.0	14.43	330.75	4,092.59	800.66	-494.00	940.78	0.10	-0.06	-0.33	232.94
	NORMAL	4,306.0	14.08	331.36	4,184.67	821.13	-505.32	964.15	0.40	-0.37	0.64	157.07
	NORMAL	4,399.0	13.16	329.81	4,275.05	840.21	-516.07	986.02	1.06	-0.99	-1.67	200.89
7/26/2011	NORMAL	4,494.0	13.28	329.69	4,367.53	858.97	-527.01	1,007.74	0.13	0.13	-0.13	347.06
	NORMAL	4,589.0	12.86	328.81	4,460.07	877.44	-537.99	1,029.22	0.49	-0.44	-0.93	204.92
	NORMAL	4,685.0	12.62	329.08	4,553.71	895.57	-548.92	1,050.39	0.26	-0.25	0.28	166.20
	NORMAL	4,780.0	12.00	327.95	4,646.53	912.85	-559.49	1,070.64	0.70	-0.65	-1.19	200.68
	NORMAL	4,876.0	11.08	326.17	4,740.58	928.97	-569.92	1,089.84	1.03	-0.96	-1.85	200.29
	NORMAL	4,971.0	10.82	327.93	4,833.85	944.11	-579.74	1,107.88	0.45	-0.27	1.85	128.73
	NORMAL	5,067.0	9.48	327.03	4,928.35	958.38	-588.82	1,124.80	1.41	-1.40	-0.94	186.31
	NORMAL	5,162.0	8.40	327.17	5,022.19	970.77	-596.84	1,139.56	1.14	-1.14	0.15	178.92
	NORMAL	5,258.0	7.74	324.84	5,117.24	981.95	-604.37	1,153.02	0.77	-0.69	-2.43	205.21
	NORMAL	5,353.0	7.39	326.43	5,211.42	992.27	-611.43	1,165.51	0.43	-0.37	1.67	149.90
	NORMAL	5,449.0	5.95	326.51	5,306.76	1,001.56	-617.59	1,176.66	1.50	-1.50	0.08	179.67
	NORMAL	5,544.0	4.81	329.58	5,401.34	1,009.11	-622.32	1,185.56	1.24	-1.20	3.23	167.35
	NORMAL	5,640.0	4.00	337.86	5,497.06	1,015.68	-625.62	1,192.89	1.07	-0.84	8.63	145.94
	NORMAL	5,736.0	2.55	344.63	5,592.90	1,020.84	-627.45	1,198.24	1.56	-1.51	7.05	168.43
7/27/2011	NORMAL	5,831.0	2.09	342.73	5,687.82	1,024.53	-628.53	1,201.94	0.49	-0.48	-2.00	188.54
	NORMAL	5,926.0	1.72	307.77	5,782.77	1,027.06	-630.17	1,204.95	1.26	-0.39	-36.80	235.39
	NORMAL	6,022.0	1.67	283.28	5,878.73	1,028.26	-632.67	1,207.29	0.75	-0.05	-25.51	253.87
	NORMAL	6,118.0	0.89	328.23	5,974.71	1,029.22	-634.42	1,209.03	1.27	-0.81	46.82	148.84
	NORMAL	6,213.0	1.22	308.03	6,069.70	1,030.47	-635.61	1,210.72	0.52	0.35	-21.26	301.19
	NORMAL	6,309.0	0.97	329.66	6,165.68	1,031.80	-636.82	1,212.49	0.50	-0.26	22.53	131.68
	NORMAL	6,404.0	0.84	306.55	6,260.67	1,032.91	-637.79	1,213.94	0.40	-0.14	-24.33	239.09
	NORMAL	6,500.0	0.59	301.52	6,356.66	1,033.59	-638.78	1,215.04	0.27	-0.26	-5.24	191.59
	NORMAL	6,595.0	1.22	277.90	6,451.65	1,033.98	-640.19	1,216.12	0.76	0.66	-24.86	317.20
	NORMAL	6,691.0	0.90	253.68	6,547.63	1,033.91	-641.93	1,216.98	0.57	-0.33	-25.23	222.76
	NORMAL	6,785.0	0.53	221.90	6,641.62	1,033.38	-642.93	1,217.06	0.56	-0.39	-33.81	211.84
	NORMAL	6,880.0	1.08	224.20	6,736.61	1,032.41	-643.85	1,216.72	0.58	0.58	2.42	4.51
	NORMAL	6,976.0	0.62	244.61	6,832.60	1,031.54	-644.95	1,216.56	0.57	-0.48	21.26	156.57
	NORMAL	7,071.0	0.33	238.15	6,927.60	1,031.17	-645.64	1,216.62	0.31	-0.31	-6.80	187.24
	NORMAL	7,167.0	1.23	166.78	7,023.59	1,030.02	-646.64	1,215.64	1.22	0.94	-74.34	273.09

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)	Bulld (%/100ft)	Turn (%/100ft)	TFace (°)
7/27/2011	NORMAL	7,261.0	1.91	196.35	7,117.56	1,027.54	-645.85	1,213.64	1.10	0.72	31.46	65.41
7/28/2011	NORMAL	7,356.0	1.46	202.77	7,212.52	1,024.90	-646.77	1,211.89	0.51	-0.47	6.76	160.43
	NORMAL	7,451.0	1.67	214.64	7,307.48	1,022.65	-648.02	1,210.64	0.41	0.22	12.49	63.09
	NORMAL	7,546.0	1.93	222.46	7,402.43	1,020.33	-649.89	1,209.65	0.38	0.27	8.23	47.32
	NORMAL	7,642.0	1.87	233.80	7,498.38	1,018.21	-652.24	1,209.10	0.40	-0.06	11.81	104.70
	NORMAL	7,715.0	1.93	227.03	7,571.34	1,016.67	-654.10	1,208.77	0.32	0.08	-9.27	281.57
	NORMAL	7,772.0	1.98	221.74	7,628.31	1,015.28	-655.46	1,208.31	0.33	0.09	-9.28	282.83