

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	GM 312-23	Wellbore No.	
Well Name	GM 312-23	Common Name	GM 312-23
Project	GV 23-06S-096W	Site	MV 10-23 Pad
Vertical Section Azimuth	338.81 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	7/29/2011	UWI	GM 312-23
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	7/29/2011	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 (°)
7/29/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/29/2011	NORMAL	85.0	0.35	238.36	85.00	-0.14	-0.22	-0.05	0.41	0.41	0.00	238.36
	NORMAL	177.0	1.67	321.15	176.99	0.76	-1.30	1.18	1.81	1.43	89.99	94.84
	NORMAL	269.0	4.13	320.71	268.86	4.37	-4.24	5.61	2.67	2.67	-0.48	359.26
	NORMAL	360.0	7.92	325.55	359.34	12.08	-9.86	14.83	4.20	4.16	5.32	10.05
	NORMAL	451.0	10.38	325.81	449.18	24.03	-18.02	28.92	2.70	2.70	0.29	1.09
	NORMAL	543.0	12.49	332.49	539.35	39.71	-27.27	46.89	2.70	2.29	7.26	35.42
	NORMAL	634.0	15.48	334.60	627.64	59.42	-37.03	68.78	3.33	3.29	2.32	10.70
	NORMAL	726.0	18.48	336.80	715.62	83.91	-48.04	95.61	3.33	3.26	2.39	13.14
	NORMAL	817.0	20.15	338.12	801.50	111.72	-59.57	125.69	1.90	1.84	1.45	15.28
	NORMAL	882.0	21.64	340.05	862.22	133.37	-67.83	148.87	2.52	2.29	2.97	25.70
7/30/2011	NORMAL	973.0	21.98	340.77	946.71	165.22	-79.16	182.67	0.48	0.37	0.79	38.53
	NORMAL	1,070.0	22.62	341.01	1,036.45	200.00	-91.21	219.45	0.67	0.66	0.25	8.21
	NORMAL	1,166.0	22.18	339.85	1,125.21	234.47	-103.46	256.02	0.65	-0.46	-1.21	224.60
	NORMAL	1,261.0	22.36	340.35	1,213.12	268.33	-115.71	292.01	0.28	0.19	0.53	46.70
	NORMAL	1,357.0	22.07	340.23	1,302.00	302.49	-127.96	328.29	0.31	-0.30	-0.12	188.84
	NORMAL	1,452.0	22.01	339.32	1,390.06	335.94	-140.28	363.94	0.36	-0.06	-0.96	259.61
7/31/2011	NORMAL	1,548.0	21.91	339.80	1,479.09	369.58	-152.82	399.83	0.21	-0.10	0.50	119.34
	NORMAL	1,643.0	21.40	339.51	1,567.39	402.45	-165.00	434.89	0.55	-0.54	-0.31	191.72
	NORMAL	1,739.0	20.77	339.35	1,656.96	434.79	-177.14	469.42	0.66	-0.66	-0.17	185.15
	NORMAL	1,835.0	20.22	339.18	1,746.88	466.22	-189.04	503.03	0.58	-0.57	-0.18	186.10

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 (°)
7/31/2011	NORMAL	1,928.0	20.03	338.69	1,834.20	496.08	-200.54	535.03	0.27	-0.20	-0.53	221.35
	NORMAL	2,024.0	20.73	338.68	1,924.19	527.23	-212.69	568.46	0.73	0.73	-0.01	359.71
	NORMAL	2,119.0	21.13	338.26	2,012.93	558.80	-225.14	602.40	0.45	0.42	-0.44	339.24
	NORMAL	2,215.0	20.70	338.10	2,102.60	590.61	-237.88	636.66	0.45	-0.45	-0.17	187.49
	NORMAL	2,311.0	21.58	337.94	2,192.14	622.72	-250.84	671.28	0.92	0.92	-0.17	356.17
	NORMAL	2,407.0	21.93	337.79	2,281.30	655.67	-264.25	706.86	0.37	0.36	-0.16	350.90
	NORMAL	2,501.0	21.66	337.62	2,368.58	687.97	-277.49	741.75	0.29	-0.29	-0.18	193.08
	NORMAL	2,595.0	21.36	338.52	2,456.03	719.94	-290.36	776.22	0.47	-0.32	0.96	132.69
	NORMAL	2,690.0	20.98	337.86	2,544.62	751.79	-303.11	810.52	0.47	-0.40	-0.69	211.79
	NORMAL	2,785.0	20.15	338.18	2,633.57	782.73	-315.60	843.89	0.88	-0.87	0.34	172.44
	NORMAL	2,881.0	20.65	338.01	2,723.55	813.78	-328.08	877.35	0.52	0.52	-0.18	353.16
	NORMAL	2,976.0	21.97	339.22	2,812.05	845.93	-340.66	911.87	1.46	1.39	1.27	18.99
	NORMAL	3,070.0	22.03	342.06	2,899.21	879.14	-352.33	947.05	1.13	0.06	3.02	88.09
	NORMAL	3,162.0	20.59	341.07	2,984.92	910.86	-362.89	980.45	1.61	-1.57	-1.08	193.57
	NORMAL	3,258.0	20.54	341.13	3,074.80	942.77	-373.82	1,014.14	0.06	-0.05	0.06	157.17
	NORMAL	3,353.0	21.13	338.28	3,163.59	974.44	-385.54	1,047.92	1.23	0.62	-3.00	298.86
	NORMAL	3,448.0	21.77	338.68	3,252.01	1,006.76	-398.29	1,082.66	0.69	0.67	0.42	13.06
	NORMAL	3,544.0	21.40	337.96	3,341.28	1,039.58	-411.33	1,117.97	0.47	-0.39	-0.75	215.26
	NORMAL	3,639.0	22.60	340.31	3,429.36	1,072.84	-423.98	1,153.55	1.57	1.26	2.47	37.36
	NORMAL	3,735.0	22.84	340.76	3,517.91	1,107.79	-436.34	1,190.61	0.31	0.25	0.47	36.12
8/1/2011	NORMAL	3,830.0	21.74	342.21	3,605.81	1,141.96	-447.79	1,226.60	1.29	-1.16	1.53	154.11
	NORMAL	3,925.0	20.72	342.82	3,694.36	1,174.76	-458.13	1,260.93	1.10	-1.07	0.64	168.06
	NORMAL	4,020.0	20.72	342.80	3,783.22	1,206.87	-468.06	1,294.46	0.01	0.00	-0.02	269.99
	NORMAL	4,115.0	19.91	340.98	3,872.31	1,238.22	-478.31	1,327.39	1.08	-0.85	-1.92	217.11
	NORMAL	4,211.0	19.87	337.95	3,962.58	1,268.80	-489.76	1,360.04	1.07	-0.04	-3.16	266.35
	NORMAL	4,306.0	20.02	337.81	4,051.89	1,298.82	-501.96	1,392.44	0.17	0.16	-0.15	342.27
	NORMAL	4,399.0	19.33	337.78	4,139.46	1,327.81	-513.79	1,423.75	0.74	-0.74	-0.03	180.82
	NORMAL	4,495.0	19.61	336.89	4,229.97	1,357.33	-526.13	1,455.73	0.42	0.29	-0.93	312.93
	NORMAL	4,589.0	20.49	338.04	4,318.27	1,387.10	-538.47	1,487.95	1.03	0.94	1.22	24.67
	NORMAL	4,685.0	19.99	337.53	4,408.34	1,417.85	-551.02	1,521.16	0.55	-0.52	-0.53	199.20
	NORMAL	4,781.0	19.89	338.42	4,498.59	1,448.20	-563.30	1,553.89	0.33	-0.10	0.93	108.65
	NORMAL	4,876.0	18.55	339.09	4,588.29	1,477.34	-574.64	1,585.16	1.43	-1.41	0.71	170.97
	NORMAL	4,972.0	17.59	338.54	4,679.55	1,505.11	-585.40	1,614.94	1.02	-1.00	-0.57	189.82
	NORMAL	5,067.0	15.82	341.82	4,770.54	1,530.77	-594.69	1,642.23	2.11	-1.86	3.45	153.52
	NORMAL	5,163.0	14.41	344.31	4,863.22	1,554.71	-602.00	1,667.19	1.62	-1.47	2.59	156.47
	NORMAL	5,258.0	12.35	344.71	4,955.64	1,575.89	-607.88	1,689.06	2.17	-2.17	0.42	177.62
8/2/2011	NORMAL	5,354.0	11.59	344.67	5,049.55	1,595.09	-613.14	1,708.87	0.79	-0.79	-0.04	180.61
	NORMAL	5,449.0	10.18	343.38	5,142.84	1,612.34	-618.06	1,726.73	1.51	-1.48	-1.36	189.17
	NORMAL	5,545.0	9.42	344.10	5,237.43	1,628.03	-622.64	1,743.01	0.80	-0.79	0.75	171.19
	NORMAL	5,640.0	7.49	341.95	5,331.40	1,641.39	-626.69	1,756.94	2.06	-2.03	-2.26	188.24
	NORMAL	5,736.0	6.86	341.55	5,426.65	1,652.78	-630.44	1,768.91	0.66	-0.66	-0.42	184.34
	NORMAL	5,831.0	5.89	341.82	5,521.06	1,662.79	-633.76	1,779.44	1.02	-1.02	0.28	178.36
8/3/2011	NORMAL	5,927.0	4.40	346.94	5,616.67	1,671.06	-636.13	1,788.01	1.62	-1.55	5.33	165.41
	NORMAL	6,022.0	2.45	13.42	5,711.50	1,676.59	-636.48	1,793.29	2.59	-2.05	27.87	153.66
	NORMAL	6,118.0	0.97	84.03	5,807.46	1,678.67	-635.19	1,794.76	2.41	-1.54	73.55	156.73
	NORMAL	6,213.0	1.12	193.77	5,902.45	1,677.85	-634.62	1,793.79	1.80	0.16	115.52	141.97
	NORMAL	6,309.0	1.93	245.14	5,998.42	1,676.26	-636.31	1,792.92	1.57	0.84	53.51	86.77
8/4/2011	NORMAL	6,405.0	1.82	280.19	6,094.37	1,675.85	-639.27	1,793.61	1.18	-0.11	36.51	112.82
	NORMAL	6,500.0	2.46	310.26	6,189.31	1,677.43	-642.31	1,796.19	1.34	0.67	31.65	75.91
	NORMAL	6,595.0	2.90	355.94	6,284.22	1,681.15	-644.04	1,800.28	2.23	0.46	48.08	101.79
	NORMAL	6,691.0	2.56	63.52	6,380.13	1,684.53	-642.29	1,802.79	3.18	-0.35	70.40	129.08
	NORMAL	6,785.0	2.37	149.60	6,474.07	1,683.79	-639.43	1,801.07	3.58	-0.20	91.57	135.38
	NORMAL	6,881.0	2.17	173.67	6,570.00	1,680.27	-638.22	1,797.35	1.01	-0.21	25.07	113.70
	NORMAL	6,976.0	2.00	159.63	6,664.93	1,676.93	-637.45	1,793.96	0.56	-0.18	-14.78	244.66
	NORMAL	7,071.0	1.18	183.43	6,759.90	1,674.39	-636.93	1,791.41	1.09	-0.86	25.05	152.64
8/5/2011	NORMAL	7,167.0	0.88	235.64	6,855.88	1,672.99	-637.60	1,790.34	0.98	-0.31	54.39	132.65
	NORMAL	7,261.0	0.67	277.72	6,949.88	1,672.66	-638.74	1,790.44	0.63	-0.22	44.77	130.44

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 (°)
8/5/2011	NORMAL	7,357.0	1.00	277.87	7,045.87	1,672.85	-640.13	1,791.12	0.34	0.34	0.16	0.45
	NORMAL	7,451.0	0.70	281.42	7,139.85	1,673.07	-641.50	1,791.83	0.32	-0.32	3.78	171.82
	NORMAL	7,547.0	0.18	155.22	7,235.85	1,673.05	-642.01	1,792.00	0.85	-0.54	-131.46	190.21
	NORMAL	7,642.0	0.56	315.72	7,330.85	1,673.25	-642.27	1,792.27	0.77	0.40	168.95	165.21
	NORMAL	7,738.0	1.24	267.48	7,426.84	1,673.54	-643.64	1,793.04	1.00	0.71	-50.25	286.04
	NORMAL	7,832.0	2.10	252.26	7,520.80	1,672.97	-646.30	1,793.47	1.02	0.91	-16.19	324.97
	NORMAL	7,918.0	2.44	242.23	7,606.73	1,671.64	-649.42	1,793.35	0.61	0.40	-11.66	305.47
	NORMAL	7,975.0	2.67	235.58	7,663.68	1,670.32	-651.58	1,792.91	0.66	0.40	-11.67	304.45