

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	GM 441-27	Wellbore No.	OH
Well Name	GM 441-27	Common Name	GM 441-27
Project	GV 27-06S-096W	Site	MV 23-27 Pad
Vertical Section Azimuth	36.31 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	4/20/2011	UWI	GM 441-27
Active Datum	KB @5,794.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Started	4/20/2011	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)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
4/20/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/20/2011	NORMAL	83.0	0.44	67.94	83.00	0.12	0.30	0.27	0.53	0.53	0.00	67.94
	NORMAL	134.0	1.32	42.63	133.99	0.63	0.87	1.02	1.85	1.73	-49.63	323.16
	NORMAL	172.0	1.94	45.53	171.98	1.40	1.63	2.09	1.65	1.63	7.63	9.03
	NORMAL	229.0	2.82	37.00	228.93	3.19	3.16	4.45	1.66	1.54	-14.96	333.78
	NORMAL	263.0	3.52	38.06	262.88	4.68	4.31	6.33	2.07	2.06	3.12	5.32
	NORMAL	309.0	4.05	29.44	308.78	7.21	5.98	9.35	1.69	1.15	-18.74	308.61
4/21/2011	NORMAL	354.0	4.93	28.30	353.64	10.30	7.68	12.84	1.97	1.96	-2.53	353.64
	NORMAL	445.0	4.49	41.92	444.33	16.39	11.91	20.26	1.32	-0.48	14.97	118.17
	NORMAL	535.0	5.37	41.13	534.00	22.18	17.03	27.96	0.98	0.98	-0.88	355.19
	NORMAL	626.0	6.16	39.55	624.54	29.16	22.94	37.08	0.89	0.87	-1.74	347.85
	NORMAL	717.0	7.30	31.90	714.91	37.83	29.11	47.72	1.59	1.25	-8.41	317.98
	NORMAL	808.0	6.86	39.81	805.22	46.91	35.64	58.91	1.17	-0.48	8.69	118.18
4/22/2011	NORMAL	879.0	6.68	41.58	875.72	53.26	41.10	67.25	0.39	-0.25	2.49	131.66
	NORMAL	972.0	6.24	40.64	968.13	61.14	47.98	77.68	0.49	-0.47	-1.01	193.05
	NORMAL	1,076.0	6.86	37.48	1,071.45	70.36	55.44	89.53	0.69	0.60	-3.04	328.25
	NORMAL	1,161.0	6.51	35.90	1,155.88	78.29	61.35	99.42	0.47	-0.41	-1.86	206.94
	NORMAL	1,255.0	5.98	38.80	1,249.32	86.42	67.55	109.64	0.66	-0.56	3.09	150.67
	NORMAL	1,350.0	7.21	38.27	1,343.69	94.96	74.34	120.54	1.30	1.29	-0.56	356.90
	NORMAL	1,444.0	7.74	34.93	1,436.89	104.78	81.62	132.77	0.73	0.56	-3.55	318.99
	NORMAL	1,539.0	7.58	35.88	1,531.04	115.10	88.95	145.43	0.21	-0.17	1.00	142.11

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 (°)
4/22/2011	NORMAL	1,633.0	7.99	30.80	1,624.18	125.74	95.93	158.13	0.85	0.44	-5.40	298.25
	NORMAL	1,728.0	7.74	32.03	1,718.28	136.83	102.71	171.08	0.32	-0.26	1.29	146.66
	NORMAL	1,822.0	7.45	32.83	1,811.46	147.32	109.37	183.48	0.33	-0.31	0.85	160.36
	NORMAL	1,917.0	7.79	31.93	1,905.62	157.96	116.11	196.04	0.38	0.36	-0.95	340.21
	NORMAL	2,011.0	6.42	29.83	1,998.89	167.92	122.10	207.62	1.48	-1.46	-2.23	189.69
	NORMAL	2,106.0	5.78	39.53	2,093.36	176.22	127.78	217.67	1.27	-0.67	10.21	126.60
4/23/2011	NORMAL	2,200.0	6.37	40.42	2,186.83	183.84	134.18	227.60	0.64	0.63	0.95	9.51
	NORMAL	2,295.0	6.40	38.79	2,281.24	191.98	140.91	238.14	0.19	0.03	-1.72	278.59
	NORMAL	2,389.0	5.99	36.06	2,374.69	200.03	147.08	248.28	0.54	-0.44	-2.90	214.35
	NORMAL	2,483.0	6.16	35.90	2,468.16	208.08	152.92	258.23	0.18	0.18	-0.17	354.23
	NORMAL	2,578.0	5.80	37.92	2,562.65	216.00	158.86	268.13	0.44	-0.38	2.13	150.69
	NORMAL	2,672.0	5.36	37.04	2,656.20	223.25	164.43	277.26	0.48	-0.47	-0.94	190.57
	NORMAL	2,767.0	5.19	37.48	2,750.80	230.20	169.71	286.00	0.18	-0.18	0.46	166.83
	NORMAL	2,861.0	5.98	41.35	2,844.35	237.25	175.54	295.13	0.93	0.84	4.12	27.42
	NORMAL	2,956.0	6.51	41.44	2,938.79	245.00	182.37	305.42	0.56	0.56	0.09	1.10
	NORMAL	3,051.0	6.42	41.70	3,033.18	253.00	189.47	316.07	0.10	-0.09	0.27	162.11
	NORMAL	3,145.0	7.15	34.47	3,126.53	261.75	196.27	327.15	1.19	0.78	-7.69	306.89
	NORMAL	3,240.0	6.67	34.15	3,220.84	271.19	202.72	338.57	0.51	-0.51	-0.34	184.43
	NORMAL	3,334.0	6.18	35.33	3,314.25	279.84	208.71	349.09	0.54	-0.52	1.26	165.50
	NORMAL	3,428.0	6.16	34.67	3,407.70	288.11	214.50	359.19	0.08	-0.02	-0.70	253.93
	NORMAL	3,523.0	5.66	32.35	3,502.20	296.26	219.91	368.95	0.58	-0.53	-2.44	204.39
	NORMAL	3,617.0	6.13	37.81	3,595.70	304.14	225.47	378.60	0.78	0.50	5.81	52.77
	NORMAL	3,712.0	6.68	36.60	3,690.11	312.59	231.87	389.19	0.60	0.58	-1.27	345.61
	NORMAL	3,806.0	6.19	35.89	3,783.51	321.08	238.10	399.73	0.53	-0.52	-0.76	188.87
	NORMAL	3,900.0	5.98	33.61	3,876.98	329.26	243.78	409.69	0.34	-0.22	-2.43	227.88
	NORMAL	3,995.0	5.89	32.03	3,971.48	337.52	249.11	419.49	0.20	-0.09	-1.66	240.37
4/24/2011	NORMAL	4,089.0	6.33	36.69	4,064.94	345.76	254.76	429.48	0.70	0.47	4.96	50.76
	NORMAL	4,184.0	6.04	37.72	4,159.39	353.92	260.95	439.72	0.33	-0.31	1.08	159.57
	NORMAL	4,278.0	5.54	37.57	4,252.91	361.42	266.74	449.20	0.53	-0.53	-0.16	181.66
	NORMAL	4,373.0	5.19	39.50	4,347.49	368.37	272.27	458.07	0.41	-0.37	2.03	153.68
	NORMAL	4,468.0	5.80	38.27	4,442.06	375.46	277.98	467.16	0.65	0.64	-1.29	348.46
	NORMAL	4,562.0	5.19	35.63	4,535.62	382.64	283.39	476.16	0.70	-0.65	-2.81	201.20
	NORMAL	4,657.0	5.45	37.66	4,630.21	389.71	288.65	484.96	0.34	0.27	2.14	36.91
	NORMAL	4,751.0	4.51	35.47	4,723.86	396.25	293.53	493.12	1.02	-1.00	-2.33	190.34
	NORMAL	4,846.0	4.04	36.43	4,818.59	401.99	297.68	500.20	0.50	-0.49	1.01	171.82
	NORMAL	4,940.0	3.59	35.05	4,912.39	407.06	301.34	506.46	0.49	-0.48	-1.47	190.84
	NORMAL	5,034.0	2.99	33.09	5,006.23	411.52	304.37	511.85	0.65	-0.64	-2.09	189.64
	NORMAL	5,129.0	2.60	32.56	5,101.12	415.41	306.88	516.47	0.41	-0.41	-0.56	183.53
	NORMAL	5,224.0	1.23	28.78	5,196.06	418.12	308.53	519.63	1.45	-1.44	-3.98	183.38
	NORMAL	5,318.0	1.32	26.76	5,290.04	419.98	309.50	521.70	0.11	0.10	-2.15	332.45
4/25/2011	NORMAL	5,413.0	0.41	301.13	5,385.03	421.13	309.70	522.75	1.42	-0.96	-90.14	197.60
	NORMAL	5,507.0	0.53	272.15	5,479.03	421.32	308.98	522.47	0.28	0.13	-30.83	281.80
	NORMAL	5,602.0	0.88	252.64	5,574.02	421.12	307.85	521.64	0.44	0.37	-20.54	315.54
	NORMAL	5,696.0	0.23	193.22	5,668.01	420.72	307.11	520.88	0.84	-0.69	-63.21	194.55
	NORMAL	5,791.0	0.24	215.36	5,763.01	420.37	306.95	520.51	0.10	0.01	23.31	94.86
	NORMAL	5,885.0	0.09	173.53	5,857.01	420.14	306.85	520.26	0.19	-0.16	-44.50	199.14
	NORMAL	5,980.0	0.58	187.30	5,952.01	419.59	306.80	519.78	0.52	0.52	14.49	16.26
	NORMAL	6,074.0	0.79	154.64	6,046.00	418.53	307.01	519.06	0.46	0.22	-34.74	281.29
	NORMAL	6,169.0	0.89	155.97	6,140.99	417.26	307.59	518.38	0.11	0.11	1.40	11.70
	NORMAL	6,263.0	0.71	74.99	6,234.99	416.75	308.45	518.48	1.11	-0.19	-86.15	222.01
4/26/2011	NORMAL	6,358.0	0.97	11.20	6,329.98	417.69	309.18	519.66	0.96	0.27	-67.15	252.07
	NORMAL	6,452.0	0.88	0.15	6,423.97	419.19	309.34	520.97	0.21	-0.10	-11.76	237.78
	NORMAL	6,546.0	0.87	11.92	6,517.96	420.61	309.48	522.20	0.19	-0.01	12.52	99.06
	NORMAL	6,641.0	0.36	12.14	6,612.95	421.61	309.70	523.13	0.54	-0.54	0.23	179.84
	NORMAL	6,735.0	0.28	329.00	6,706.95	422.09	309.64	523.49	0.26	-0.09	-45.89	230.88
	NORMAL	6,830.0	0.17	325.52	6,801.95	422.41	309.44	523.62	0.12	-0.12	-3.66	185.34
	NORMAL	6,924.0	0.52	350.58	6,895.95	422.94	309.29	523.97	0.40	0.37	26.66	36.19

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 (°)
4/26/2011	NORMAL	7,019.0	0.72	340.64	6,990.94	423.93	309.02	524.60	0.24	0.21	-10.46	326.70
	NORMAL	7,113.0	0.68	289.67	7,084.94	424.68	308.30	524.78	0.64	-0.04	-54.22	241.09
	NORMAL	7,208.0	0.87	207.51	7,179.93	424.23	307.44	523.90	1.08	0.20	-86.48	236.93
	NORMAL	7,289.0	1.07	212.01	7,260.92	423.04	306.75	522.54	0.26	0.25	5.56	23.11
4/28/2011	NORMAL	7,346.0	1.07	212.01	7,317.91	422.14	306.19	521.48	0.00	0.00	0.00	0.00