

# Deviation Summary

PICEANCE VLY

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	GM 32-12	Wellbore No.	00
Wellbore Legal Name	GM 32-12	Common Wellbore Name	GM 32-12
Project	GV 12-07S-096W	Site	GM 21-12 Pad
Vertical Section Azimuth	114.29 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	11/23/2014	UWI	GM 32-12
Active datum	KB @5,151.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	11/23/2014	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)	DLS (°/100usft)	Buidl Rate (°/100usft)	Turn (°/100usft)	Tface (°)
11/23/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/23/2014	NORMAL	68.0	0.44	270.62	68.00	0.00	-0.26	-0.24	0.65	0.65	0.00	270.62
	NORMAL	99.0	0.53	218.58	99.00	-0.11	-0.47	-0.38	1.40	0.29	-167.87	254.74
	NORMAL	129.0	0.62	141.15	129.00	-0.34	-0.45	-0.27	2.41	0.30	-258.10	236.86
	NORMAL	160.0	1.76	119.53	159.99	-0.71	0.07	0.35	3.89	3.68	-69.74	327.46
	NORMAL	190.0	2.82	114.79	189.97	-1.24	1.14	1.55	3.59	3.53	-15.80	347.50
	NORMAL	220.0	3.26	110.57	219.92	-1.85	2.60	3.14	1.64	1.47	-14.07	330.92
	NORMAL	250.0	3.61	111.62	249.87	-2.50	4.28	4.93	1.19	1.17	3.50	10.71
	NORMAL	281.0	4.22	109.34	280.80	-3.24	6.26	7.04	2.03	1.97	-7.35	344.54
	NORMAL	311.0	4.84	115.22	310.70	-4.14	8.45	9.41	2.58	2.07	19.60	39.79
	NORMAL	341.0	5.28	117.16	340.59	-5.31	10.82	12.05	1.57	1.47	6.47	22.22
	NORMAL	371.0	5.45	111.09	370.46	-6.46	13.38	14.85	1.97	0.57	-20.23	283.64
	NORMAL	401.0	6.16	112.85	400.30	-7.59	16.19	17.88	2.44	2.37	5.87	14.95
	NORMAL	432.0	7.04	113.12	431.10	-8.99	19.47	21.45	2.84	2.84	0.87	2.15
	NORMAL	499.0	9.32	114.51	497.41	-12.85	28.19	30.98	3.42	3.40	2.07	5.65
	NORMAL	589.0	12.97	111.96	585.70	-19.65	44.19	48.36	4.09	4.06	-2.83	351.06
	NORMAL	680.0	17.06	113.90	673.57	-28.88	65.88	71.93	4.53	4.49	2.13	7.95
	NORMAL	770.0	20.44	114.07	758.79	-40.64	92.30	100.85	3.76	3.76	0.19	1.01
	NORMAL	860.0	23.30	113.98	842.30	-54.29	122.92	134.37	3.18	3.18	-0.10	359.29
	NORMAL	951.0	25.27	114.07	925.24	-69.53	157.10	171.80	2.17	2.16	0.10	1.12
	NORMAL	1,046.0	27.82	113.46	1,010.22	-86.63	195.96	214.25	2.70	2.68	-0.64	353.62



## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
11/23/2014	NORMAL	1,139.0	30.02	113.72	1,091.62	-104.63	237.17	259.21	2.37	2.37	0.28	3.38
	NORMAL	1,235.0	31.43	116.09	1,174.15	-125.30	281.64	308.25	1.94	1.47	2.47	41.68
11/24/2014	NORMAL	1,330.0	33.67	116.18	1,254.22	-147.81	327.52	359.33	2.36	2.36	0.09	1.28
	NORMAL	1,426.0	36.97	114.42	1,332.54	-171.49	377.70	414.81	3.60	3.44	-1.83	342.14
	NORMAL	1,521.0	37.71	115.04	1,408.07	-195.60	430.04	472.43	0.87	0.78	0.65	27.19
	NORMAL	1,615.0	38.20	114.86	1,482.19	-219.99	482.46	530.24	0.53	0.52	-0.19	347.20
11/25/2014	NORMAL	1,713.0	38.77	114.51	1,558.90	-245.46	537.87	591.23	0.62	0.58	-0.36	338.95
	NORMAL	1,809.0	38.68	113.89	1,633.79	-270.07	592.65	651.28	0.41	-0.09	-0.65	256.69
	NORMAL	1,904.0	38.59	112.66	1,708.00	-293.51	647.13	710.58	0.81	-0.09	-1.29	262.84
	NORMAL	1,999.0	37.93	112.40	1,782.60	-316.05	701.47	769.38	0.72	-0.69	-0.27	193.61
11/26/2014	NORMAL	2,095.0	37.45	113.19	1,858.57	-338.79	755.58	828.06	0.71	-0.50	0.82	135.13
	NORMAL	2,190.0	37.89	114.16	1,933.76	-362.10	808.75	886.11	0.78	0.46	1.02	53.80
	NORMAL	2,286.0	39.21	115.04	2,008.84	-387.01	863.14	945.93	1.49	1.38	0.92	22.91
	NORMAL	2,381.0	39.52	114.51	2,082.29	-412.26	917.85	1,006.18	0.48	0.33	-0.56	312.48
	NORMAL	2,476.0	39.87	113.54	2,155.39	-436.96	973.27	1,066.86	0.75	0.37	-1.02	299.09
	NORMAL	2,571.0	38.81	114.77	2,228.86	-461.60	1,028.22	1,127.07	1.39	-1.12	1.29	144.14
	NORMAL	2,666.0	39.38	114.60	2,302.59	-486.62	1,082.65	1,186.98	0.61	0.60	-0.18	349.28
	NORMAL	2,762.0	38.20	114.16	2,377.42	-511.45	1,137.42	1,247.12	1.26	-1.23	-0.46	192.98
	NORMAL	2,856.0	36.70	114.51	2,452.04	-535.00	1,189.50	1,304.28	1.61	-1.60	0.37	172.06
	NORMAL	2,952.0	34.81	114.25	2,529.94	-558.15	1,240.59	1,360.37	1.98	-1.97	-0.27	184.49
	NORMAL	3,047.0	33.45	113.98	2,608.58	-579.93	1,289.24	1,413.67	1.44	-1.43	-0.28	186.24
	NORMAL	3,142.0	32.13	115.83	2,688.44	-601.58	1,335.91	1,465.11	1.74	-1.39	1.95	143.58
	NORMAL	3,237.0	30.77	115.39	2,769.48	-623.01	1,380.60	1,514.66	1.45	-1.43	-0.46	189.39
	NORMAL	3,332.0	29.45	113.72	2,851.66	-642.82	1,423.94	1,562.31	1.65	-1.39	-1.76	211.68
	NORMAL	3,428.0	28.31	112.05	2,935.73	-660.86	1,466.64	1,608.66	1.45	-1.19	-1.74	214.55
	NORMAL	3,524.0	27.08	110.29	3,020.73	-676.99	1,508.24	1,653.21	1.54	-1.28	-1.83	212.85
	NORMAL	3,619.0	25.06	109.15	3,106.06	-691.09	1,547.53	1,694.82	2.19	-2.13	-1.20	193.42
	NORMAL	3,714.0	22.73	109.85	3,192.91	-703.92	1,583.81	1,733.16	2.47	-2.45	0.74	173.38
	NORMAL	3,809.0	20.57	110.64	3,281.20	-716.04	1,616.69	1,768.12	2.29	-2.27	0.83	172.68
	NORMAL	3,905.0	18.55	109.32	3,371.66	-727.04	1,646.89	1,800.17	2.15	-2.10	-1.38	191.72
	NORMAL	4,000.0	16.57	111.17	3,462.23	-736.93	1,673.78	1,828.75	2.17	-2.08	1.95	165.14
11/27/2014	NORMAL	4,095.0	14.81	111.70	3,553.69	-746.31	1,697.70	1,854.41	1.86	-1.85	0.56	175.60
	NORMAL	4,191.0	12.13	113.54	3,647.04	-754.88	1,718.35	1,876.76	2.83	-2.79	1.92	171.81
	NORMAL	4,286.0	9.67	110.82	3,740.32	-761.70	1,734.96	1,894.70	2.64	-2.59	-2.86	190.48
	NORMAL	4,382.0	6.99	110.73	3,835.30	-766.64	1,747.96	1,908.58	2.79	-2.79	-0.09	180.23
	NORMAL	4,477.0	6.24	113.72	3,929.66	-770.76	1,758.10	1,919.52	0.87	-0.79	3.15	156.81
	NORMAL	4,572.0	6.15	116.62	4,024.11	-775.12	1,767.37	1,929.76	0.34	-0.09	3.05	107.48
	NORMAL	4,668.0	5.54	118.73	4,119.61	-779.65	1,776.03	1,939.52	0.67	-0.64	2.20	161.64
	NORMAL	4,763.0	5.05	120.66	4,214.20	-783.98	1,783.65	1,948.25	0.55	-0.52	2.03	160.98
	NORMAL	4,859.0	2.81	121.28	4,309.97	-787.36	1,789.30	1,954.79	2.33	-2.33	0.65	179.22
	NORMAL	4,954.0	1.85	82.96	4,404.90	-788.38	1,792.81	1,958.41	1.87	-1.01	-40.34	220.18
	NORMAL	5,050.0	0.97	45.08	4,500.87	-787.62	1,794.92	1,960.02	1.29	-0.92	-39.46	208.78
	NORMAL	5,145.0	0.79	44.37	4,595.86	-786.58	1,795.95	1,960.53	0.19	-0.19	-0.75	183.11
	NORMAL	5,240.0	0.61	45.60	4,690.85	-785.76	1,796.77	1,960.94	0.19	-0.19	1.29	175.84
	NORMAL	5,334.0	0.44	55.71	4,784.85	-785.21	1,797.43	1,961.31	0.21	-0.18	10.76	156.41
	NORMAL	5,429.0	0.61	74.43	4,879.84	-784.87	1,798.21	1,961.89	0.25	0.18	19.71	54.87
11/28/2014	NORMAL	5,524.0	0.57	80.58	4,974.84	-784.65	1,799.17	1,962.67	0.08	-0.04	6.47	125.33
	NORMAL	5,619.0	0.35	92.36	5,069.84	-784.59	1,799.92	1,963.33	0.25	-0.23	12.40	162.55
	NORMAL	5,714.0	0.35	194.40	5,164.84	-784.88	1,800.14	1,963.65	0.57	0.00	107.41	141.02
	NORMAL	5,809.0	0.92	218.40	5,259.83	-785.76	1,799.60	1,963.51	0.65	0.60	25.26	37.34
	NORMAL	5,904.0	1.32	209.26	5,354.81	-787.31	1,798.59	1,963.23	0.46	0.42	-9.62	331.32
	NORMAL	6,000.0	1.85	210.05	5,450.77	-789.62	1,797.27	1,962.98	0.55	0.55	0.82	2.76
	NORMAL	6,095.0	1.89	210.49	5,545.72	-792.29	1,795.51	1,962.66	0.04	0.04	0.46	19.97
	NORMAL	6,191.0	2.20	214.44	5,641.66	-795.18	1,793.86	1,962.16	0.35	0.32	4.11	26.43
	NORMAL	6,284.0	2.42	216.29	5,734.59	-798.23	1,791.69	1,961.44	0.25	0.24	1.99	19.65
	NORMAL	6,380.0	2.86	220.24	5,830.49	-801.70	1,788.94	1,960.36	0.50	0.46	4.11	24.45

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
11/28/2014	NORMAL	6,475.0	3.17	231.32	5,925.36	-805.15	1,785.36	1,958.51	0.69	0.33	11.66	67.60
	NORMAL	6,570.0	2.55	236.77	6,020.24	-807.95	1,781.54	1,956.19	0.71	-0.65	5.74	159.02
	NORMAL	6,666.0	2.64	233.25	6,116.14	-810.44	1,777.99	1,953.97	0.19	0.09	-3.67	297.69
	NORMAL	6,761.0	2.55	231.05	6,211.04	-813.08	1,774.59	1,951.96	0.14	-0.09	-2.32	226.81
	NORMAL	6,830.0	2.55	231.05	6,279.97	-815.01	1,772.20	1,950.58	0.00	0.00	0.00	0.00