

# Deviation Summary

PICEANCE VLY

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	GM 321-13	Wellbore No.	00
Wellbore Legal Name	GM 321-13	Common Wellbore Name	GM 321-13
Project	GV 12-07S-096W	Site	GM 24-12 Pad
Vertical Section Azimuth	120.00 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	4/21/2014	UWI	GM 321-13
Active datum	KB @5,165.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SCIENTIFIC
Date Started	4/21/2014	Ended	4/26/2014
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)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
4/21/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/21/2014	NORMAL	112.0	0.79	83.31	112.00	0.09	0.77	0.62	0.71	0.71	0.00	83.31
	NORMAL	202.0	1.85	111.27	201.97	-0.36	2.74	2.55	1.34	1.18	31.07	45.78
	NORMAL	293.0	3.34	125.07	292.88	-2.42	6.28	6.65	1.76	1.64	15.16	29.74
	NORMAL	354.0	4.84	127.44	353.72	-5.01	9.77	10.97	2.47	2.46	3.89	7.61
	NORMAL	445.0	7.21	117.42	444.21	-9.97	17.89	20.48	2.84	2.60	-11.01	331.03
	NORMAL	536.0	8.80	122.17	534.32	-16.31	28.85	33.14	1.89	1.75	5.22	24.95
	NORMAL	627.0	10.82	122.96	623.99	-24.66	41.91	48.63	2.22	2.22	0.87	4.20
	NORMAL	719.0	12.84	120.41	714.03	-34.54	57.98	67.48	2.27	2.20	-2.77	344.24
	NORMAL	809.0	14.96	117.16	801.39	-44.90	76.94	89.08	2.51	2.36	-3.61	338.20
4/22/2014	NORMAL	899.0	16.72	118.83	887.97	-56.45	98.62	113.63	2.02	1.96	1.86	15.33
	NORMAL	1,065.0	19.57	114.84	1,045.71	-79.65	144.78	165.21	1.87	1.72	-2.40	334.54
	NORMAL	1,159.0	20.77	116.25	1,133.94	-93.63	174.01	197.52	1.38	1.28	1.50	22.72
	NORMAL	1,254.0	22.09	121.48	1,222.38	-110.41	204.36	232.19	2.44	1.39	5.51	57.82
	NORMAL	1,348.0	24.46	120.22	1,308.72	-129.44	236.25	269.32	2.58	2.52	-1.34	347.56
	NORMAL	1,442.0	27.14	121.60	1,393.35	-150.47	271.34	310.22	2.92	2.85	1.47	13.26
	NORMAL	1,510.0	28.92	122.22	1,453.37	-167.37	298.46	342.16	2.65	2.62	0.91	9.57
4/23/2014	NORMAL	1,625.0	29.56	124.38	1,553.72	-198.21	345.40	398.23	1.07	0.56	1.88	59.71
	NORMAL	1,719.0	28.67	124.40	1,635.84	-224.05	383.14	443.83	0.95	-0.95	0.02	179.38
	NORMAL	1,814.0	26.67	123.09	1,719.97	-248.56	419.81	487.85	2.20	-2.11	-1.38	196.34
	NORMAL	1,908.0	27.32	122.82	1,803.73	-271.77	455.61	530.46	0.70	0.69	-0.29	349.20

## 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 (°)
4/23/2014	NORMAL	2,002.0	28.05	122.82	1,886.97	-295.44	492.32	574.08	0.78	0.78	0.00	0.00
	NORMAL	2,097.0	29.28	119.96	1,970.33	-319.15	531.22	619.62	1.94	1.29	-3.01	310.62
	NORMAL	2,191.0	29.46	118.56	2,052.25	-341.68	571.43	665.72	0.76	0.19	-1.49	284.08
	NORMAL	2,285.0	29.36	117.57	2,134.13	-363.40	612.16	711.85	0.53	-0.11	-1.05	257.95
	NORMAL	2,380.0	29.39	116.33	2,216.92	-384.52	653.70	758.38	0.64	0.03	-1.31	272.28
4/24/2014	NORMAL	2,474.0	28.47	116.85	2,299.19	-404.87	694.36	803.77	1.01	-0.98	0.55	164.94
	NORMAL	2,568.0	27.91	117.88	2,382.04	-425.28	733.80	848.13	0.79	-0.60	1.10	139.47
	NORMAL	2,662.0	27.29	118.47	2,465.34	-445.84	772.19	891.66	0.72	-0.66	0.63	156.47
	NORMAL	2,759.0	26.80	118.05	2,551.73	-466.72	811.04	935.74	0.54	-0.51	-0.43	201.11
	NORMAL	2,851.0	26.30	118.17	2,634.03	-486.10	847.31	976.84	0.55	-0.54	0.13	173.93
	NORMAL	2,945.0	25.25	116.76	2,718.68	-504.95	883.57	1,017.67	1.29	-1.12	-1.50	209.65
	NORMAL	3,040.0	24.00	116.40	2,805.04	-522.67	918.97	1,057.18	1.33	-1.32	-0.38	186.68
	NORMAL	3,134.0	21.50	115.70	2,891.72	-538.64	951.62	1,093.45	2.68	-2.66	-0.74	185.86
	NORMAL	3,228.0	20.12	116.89	2,979.58	-553.42	981.56	1,126.77	1.54	-1.47	1.27	163.52
	NORMAL	3,322.0	19.05	117.95	3,068.14	-567.93	1,009.53	1,158.24	1.20	-1.14	1.13	162.13
	NORMAL	3,416.0	17.01	119.00	3,157.52	-581.78	1,035.11	1,187.33	2.20	-2.17	1.12	171.45
	NORMAL	3,511.0	14.97	117.61	3,248.84	-594.21	1,058.14	1,213.48	2.18	-2.15	-1.46	189.96
	NORMAL	3,605.0	13.44	116.21	3,339.97	-604.66	1,078.70	1,236.51	1.67	-1.63	-1.49	191.98
	NORMAL	3,699.0	12.13	117.49	3,431.64	-614.04	1,097.26	1,257.28	1.43	-1.39	1.36	168.42
	NORMAL	3,793.0	10.03	115.86	3,523.88	-622.17	1,113.39	1,275.31	2.26	-2.23	-1.73	187.69
	NORMAL	3,888.0	9.09	117.49	3,617.56	-629.25	1,127.49	1,291.06	1.03	-0.99	1.72	164.74
	NORMAL	3,982.0	7.64	120.40	3,710.56	-635.84	1,139.47	1,304.73	1.61	-1.54	3.10	165.16
	NORMAL	4,076.0	6.32	119.68	3,803.86	-641.56	1,149.38	1,316.15	1.41	-1.40	-0.77	183.44
	NORMAL	4,170.0	4.73	125.00	3,897.42	-646.35	1,157.03	1,325.19	1.78	-1.69	5.66	164.78
	NORMAL	4,265.0	3.26	124.64	3,992.18	-650.13	1,162.46	1,331.78	1.55	-1.55	-0.38	180.80
	NORMAL	4,359.0	2.74	128.18	4,086.06	-653.04	1,166.42	1,336.67	0.59	-0.55	3.77	162.15
	NORMAL	4,453.0	1.23	147.82	4,180.00	-655.28	1,168.73	1,339.79	1.74	-1.61	20.89	165.35
	NORMAL	4,546.0	0.54	208.73	4,272.99	-658.51	1,169.05	1,340.68	1.16	-0.74	65.49	154.00
	NORMAL	4,640.0	0.68	191.44	4,366.98	-657.44	1,168.72	1,340.87	0.24	0.15	-18.39	298.40
4/25/2014	NORMAL	4,734.0	1.02	199.29	4,460.97	-658.78	1,168.34	1,341.20	0.38	0.36	8.35	22.86
	NORMAL	4,829.0	1.14	209.87	4,555.95	-660.40	1,167.59	1,341.36	0.24	0.13	11.14	64.32
	NORMAL	4,923.0	1.49	213.21	4,649.93	-662.23	1,166.45	1,341.29	0.38	0.37	3.55	14.03
	NORMAL	5,017.0	1.58	213.33	4,743.90	-664.34	1,165.07	1,341.15	0.10	0.10	0.13	2.11
	NORMAL	5,111.0	2.09	213.84	4,837.85	-666.84	1,163.40	1,340.96	0.54	0.54	0.54	2.09
	NORMAL	5,205.0	1.97	216.27	4,931.79	-669.57	1,161.49	1,340.67	0.16	-0.13	2.59	145.56
	NORMAL	5,300.0	2.47	214.09	5,026.72	-672.58	1,159.38	1,340.34	0.54	0.53	-2.29	349.37
	NORMAL	5,394.0	2.14	219.44	5,120.64	-675.62	1,157.13	1,339.91	0.42	-0.35	5.69	149.77
	NORMAL	5,488.0	2.22	218.89	5,214.57	-678.39	1,154.87	1,339.34	0.09	0.09	-0.59	345.07
	NORMAL	5,583.0	2.11	219.01	5,309.50	-681.18	1,152.61	1,338.78	0.12	-0.12	0.13	177.70
	NORMAL	5,676.0	2.36	224.11	5,402.43	-683.89	1,150.20	1,338.05	0.34	0.27	5.48	41.07
	NORMAL	5,771.0	2.37	232.02	5,497.35	-686.50	1,147.29	1,336.83	0.34	0.01	8.33	92.20
	NORMAL	5,865.0	3.40	231.37	5,591.23	-689.44	1,143.58	1,335.09	1.10	1.10	-0.69	357.86
	NORMAL	5,959.0	3.81	228.63	5,685.05	-693.24	1,139.06	1,333.08	0.47	0.44	-2.91	335.84
	NORMAL	6,054.0	3.78	232.81	5,779.84	-697.22	1,134.20	1,330.85	0.29	-0.03	4.40	98.27
	NORMAL	6,148.0	3.43	233.05	5,873.65	-700.78	1,129.48	1,328.55	0.37	-0.37	0.26	177.65
	NORMAL	6,211.0	3.61	230.26	5,936.53	-703.18	1,126.45	1,327.13	0.39	0.29	-4.43	315.02
	NORMAL	6,270.0	3.61	230.26	5,995.42	-705.56	1,123.59	1,325.84	0.00	0.00	0.00	0.00