

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	GM 414-33	Wellbore No.	00
Wellbore Legal Name	GM 414-33	Common Wellbore Name	GM 414-33
Project	GV 33-06S-096W	Site	GM 13-33 Pad
Vertical Section Azimuth	185.44 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	11/3/2014	UWI	GM 414-33
Active datum	KB @5,764.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	11/3/2014	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)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
11/3/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/3/2014	NORMAL	75.0	0.18	166.29	75.00	-0.11	0.03	0.11	0.24	0.24	0.00	166.29
	NORMAL	165.0	3.26	188.70	164.95	-2.78	-0.33	2.80	3.44	3.42	24.90	23.68
	NORMAL	255.0	6.42	186.24	254.62	-10.32	-1.26	10.39	3.52	3.51	-2.73	355.01
	NORMAL	346.0	9.50	185.80	344.73	-22.85	-2.57	22.99	3.39	3.38	-0.48	358.65
11/4/2014	NORMAL	417.0	11.89	185.30	414.49	-35.96	-3.84	36.16	3.37	3.37	-0.70	357.53
	NORMAL	508.0	13.61	186.27	503.24	-55.94	-5.88	56.24	1.90	1.89	1.07	7.57
	NORMAL	598.0	16.77	184.63	590.09	-79.41	-8.08	79.82	3.54	3.51	-1.82	351.46
	NORMAL	689.0	19.98	183.85	676.44	-108.02	-10.18	108.50	3.54	3.53	-0.86	355.25
	NORMAL	779.0	22.77	185.40	760.24	-140.71	-12.86	141.29	3.16	3.10	1.72	12.17
	NORMAL	870.0	24.97	186.19	843.45	-177.34	-16.59	178.11	2.44	2.42	0.87	8.63
	NORMAL	961.0	26.53	184.59	925.41	-216.69	-20.28	217.64	1.88	1.71	-1.76	335.26
	NORMAL	1,039.0	26.03	184.52	995.35	-251.12	-23.03	252.17	0.64	-0.64	-0.09	183.52
11/5/2014	NORMAL	1,148.0	25.81	183.36	1,093.39	-298.65	-26.30	299.80	0.51	-0.20	-1.06	246.02
	NORMAL	1,242.0	26.02	186.49	1,177.94	-339.57	-29.83	340.87	1.47	0.22	3.33	82.68
	NORMAL	1,335.0	25.72	185.42	1,261.62	-379.92	-34.04	381.44	0.60	-0.32	-1.15	236.80
	NORMAL	1,429.0	26.92	187.43	1,345.87	-421.33	-38.72	423.11	1.59	1.28	2.14	37.50
	NORMAL	1,523.0	26.70	187.94	1,429.77	-463.35	-44.39	465.47	0.34	-0.23	0.54	133.95
	NORMAL	1,616.0	26.18	187.32	1,513.04	-504.39	-49.89	506.85	0.63	-0.56	-0.67	207.69
	NORMAL	1,709.0	25.95	187.01	1,596.58	-544.93	-54.99	547.69	0.29	-0.25	-0.33	210.50
	NORMAL	1,801.0	26.95	186.10	1,678.95	-585.64	-59.66	588.66	1.17	1.09	-0.99	337.53

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 (")
11/5/2014	NORMAL	1,896.0	26.86	185.64	1,763.67	-628.41	-64.06	631.65	0.24	-0.09	-0.48	246.41
	NORMAL	1,989.0	26.42	184.81	1,846.80	-669.93	-67.86	673.35	0.62	-0.47	-0.89	219.85
	NORMAL	2,083.0	25.38	183.37	1,931.35	-710.88	-70.79	714.39	1.29	-1.11	-1.53	210.52
	NORMAL	2,178.0	26.54	183.75	2,016.77	-752.39	-73.38	755.95	1.23	1.22	0.40	8.33
	NORMAL	2,272.0	25.92	183.84	2,101.09	-793.84	-76.13	797.48	0.66	-0.66	0.10	176.37
	NORMAL	2,366.0	27.15	184.72	2,185.18	-835.72	-79.27	839.47	1.37	1.31	0.94	18.12
	NORMAL	2,460.0	27.03	184.08	2,268.87	-878.40	-82.55	882.27	0.34	-0.13	-0.68	247.34
	NORMAL	2,553.0	25.80	182.75	2,352.16	-919.69	-85.03	923.61	1.47	-1.32	-1.43	205.10
	NORMAL	2,648.0	23.73	183.99	2,438.42	-959.41	-87.35	963.37	2.25	-2.18	1.31	166.48
	NORMAL	2,741.0	22.85	182.65	2,523.84	-996.12	-89.49	1,000.12	1.10	-0.95	-1.44	210.44
	NORMAL	2,835.0	22.18	185.31	2,610.68	-1,032.02	-91.97	1,036.09	1.30	-0.71	2.83	124.56
	NORMAL	2,929.0	22.30	184.86	2,697.69	-1,067.46	-95.13	1,071.67	0.22	0.13	-0.48	304.96
11/6/2014	NORMAL	3,023.0	21.78	184.67	2,784.82	-1,102.61	-98.06	1,106.94	0.56	-0.55	-0.20	187.72
	NORMAL	3,117.0	21.46	183.91	2,872.20	-1,137.15	-100.65	1,141.57	0.45	-0.34	-0.81	220.84
	NORMAL	3,211.0	20.93	182.63	2,959.85	-1,171.07	-102.59	1,175.53	0.75	-0.56	-1.36	220.53
	NORMAL	3,306.0	20.61	181.17	3,048.67	-1,204.74	-103.71	1,209.15	0.64	-0.34	-1.54	237.60
	NORMAL	3,400.0	19.70	184.08	3,136.92	-1,237.09	-105.18	1,241.49	1.44	-0.97	3.10	133.59
	NORMAL	3,495.0	19.60	182.21	3,226.39	-1,268.98	-106.93	1,273.40	0.67	-0.11	-1.97	260.08
	NORMAL	3,589.0	18.80	184.90	3,315.16	-1,299.83	-108.83	1,304.29	1.27	-0.85	2.86	133.39
	NORMAL	3,683.0	17.91	186.23	3,404.38	-1,329.29	-111.70	1,333.89	1.05	-0.95	1.41	155.43
	NORMAL	3,777.0	16.73	186.30	3,494.11	-1,357.10	-114.75	1,361.87	1.26	-1.26	0.07	179.02
	NORMAL	3,871.0	16.24	185.15	3,584.25	-1,383.64	-117.41	1,388.54	0.63	-0.52	-1.22	213.11
	NORMAL	3,964.0	14.93	186.21	3,673.83	-1,408.51	-119.88	1,413.53	1.44	-1.41	1.14	168.24
	NORMAL	4,058.0	14.40	185.17	3,764.76	-1,432.19	-122.24	1,437.32	0.63	-0.56	-1.11	205.91
	NORMAL	4,152.0	12.89	185.11	3,856.11	-1,454.27	-124.23	1,459.50	1.61	-1.61	-0.06	180.51
	NORMAL	4,247.0	12.24	184.24	3,948.83	-1,474.87	-125.92	1,480.16	0.71	-0.68	-0.92	195.81
	NORMAL	4,341.0	10.86	187.78	4,040.93	-1,493.58	-127.85	1,498.97	1.65	-1.47	3.77	154.54
	NORMAL	4,436.0	9.98	187.19	4,134.36	-1,510.61	-130.09	1,516.14	0.93	-0.93	-0.62	186.62
	NORMAL	4,531.0	8.25	187.91	4,228.16	-1,525.53	-132.06	1,531.18	1.82	-1.82	0.76	176.58
	NORMAL	4,625.0	7.13	185.32	4,321.31	-1,538.02	-133.53	1,543.75	1.25	-1.19	-2.76	195.91
	NORMAL	4,719.0	6.31	179.04	4,414.67	-1,549.00	-133.99	1,554.72	1.17	-0.87	-6.68	218.78
11/7/2014	NORMAL	4,814.0	5.72	174.94	4,509.14	-1,558.93	-133.48	1,564.57	0.77	-0.62	-4.32	214.03
	NORMAL	4,908.0	4.25	169.44	4,602.79	-1,567.02	-132.43	1,572.52	1.64	-1.56	-5.85	195.28
	NORMAL	5,003.0	2.81	177.37	4,697.60	-1,572.81	-131.68	1,578.21	1.60	-1.52	8.35	165.20
	NORMAL	5,096.0	2.65	183.48	4,790.50	-1,577.23	-131.70	1,582.62	0.36	-0.17	6.57	121.83
	NORMAL	5,189.0	1.42	171.50	4,883.44	-1,580.52	-131.66	1,585.88	1.39	-1.32	-12.88	193.16
	NORMAL	5,283.0	0.18	53.53	4,977.43	-1,581.58	-131.37	1,586.91	1.61	-1.32	-125.50	186.03
	NORMAL	5,376.0	0.09	146.99	5,070.43	-1,581.56	-131.21	1,586.87	0.22	-0.10	100.49	154.15
	NORMAL	5,470.0	0.34	212.78	5,164.43	-1,581.85	-131.33	1,587.18	0.33	0.27	69.99	80.94
	NORMAL	5,565.0	0.46	207.80	5,259.43	-1,582.43	-131.66	1,587.78	0.13	0.13	-5.24	341.34
	NORMAL	5,660.0	0.86	208.70	5,354.42	-1,583.39	-132.18	1,588.79	0.42	0.42	0.95	1.93
	NORMAL	5,755.0	1.38	208.62	5,449.40	-1,585.02	-133.07	1,590.50	0.55	0.55	-0.08	359.79
	NORMAL	5,849.0	0.36	222.33	5,543.39	-1,586.23	-133.81	1,591.77	1.10	-1.09	14.59	175.27
	NORMAL	5,942.0	0.73	232.61	5,636.38	-1,586.81	-134.48	1,592.41	0.41	0.40	11.05	19.98
	NORMAL	6,036.0	0.90	212.70	5,730.37	-1,587.79	-135.35	1,593.47	0.35	0.18	-21.18	290.77
11/8/2014	NORMAL	6,128.0	1.14	211.24	5,822.36	-1,589.18	-136.21	1,594.94	0.26	0.26	-1.59	353.09
	NORMAL	6,224.0	1.56	215.14	5,918.33	-1,591.07	-137.46	1,596.93	0.45	0.44	4.06	14.29
	NORMAL	6,318.0	1.57	214.19	6,012.30	-1,593.18	-138.92	1,599.18	0.03	0.01	-1.01	290.60
	NORMAL	6,412.0	1.96	218.80	6,106.25	-1,595.50	-140.65	1,601.65	0.44	0.41	4.90	22.32
	NORMAL	6,505.0	1.83	222.12	6,199.20	-1,597.84	-142.65	1,604.17	0.18	-0.14	3.57	141.47
	NORMAL	6,601.0	1.66	226.07	6,295.16	-1,599.94	-144.67	1,606.45	0.22	-0.18	4.11	146.68
	NORMAL	6,695.0	1.84	227.31	6,389.11	-1,601.91	-146.76	1,608.61	0.20	0.19	1.32	12.50
	NORMAL	6,790.0	2.17	234.85	6,484.06	-1,603.98	-149.36	1,610.91	0.44	0.35	7.94	42.45
	NORMAL	6,905.0	2.25	232.74	6,598.97	-1,606.60	-152.93	1,613.86	0.10	0.07	-1.83	313.46
	NORMAL	6,970.0	2.25	232.74	6,663.92	-1,608.14	-154.96	1,615.59	0.00	0.00	0.00	0.00