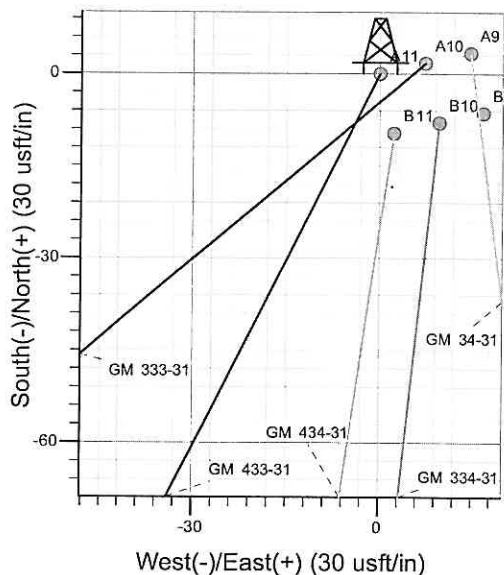
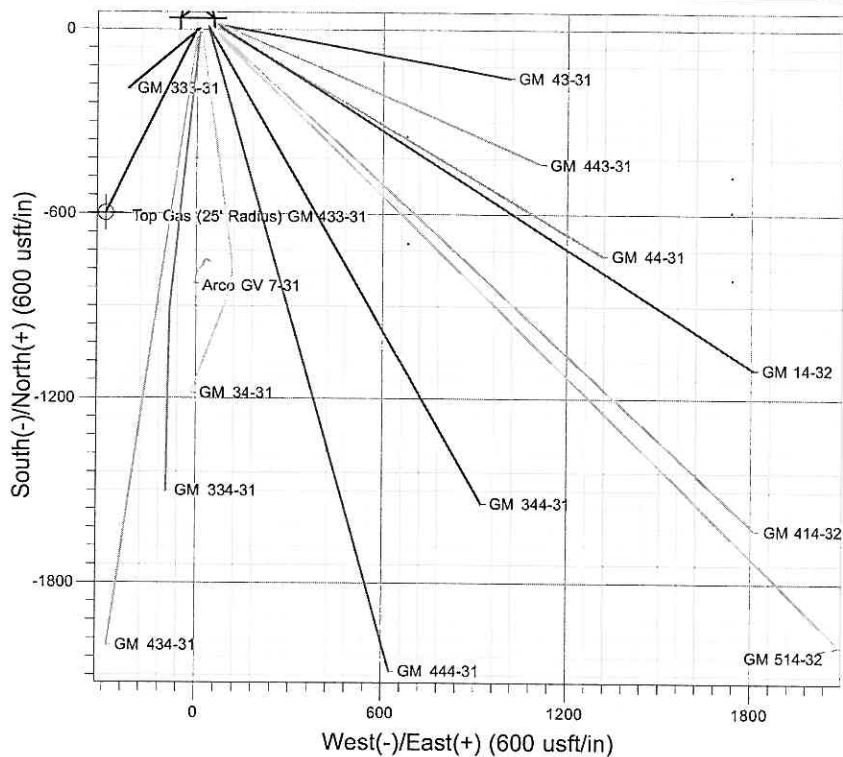
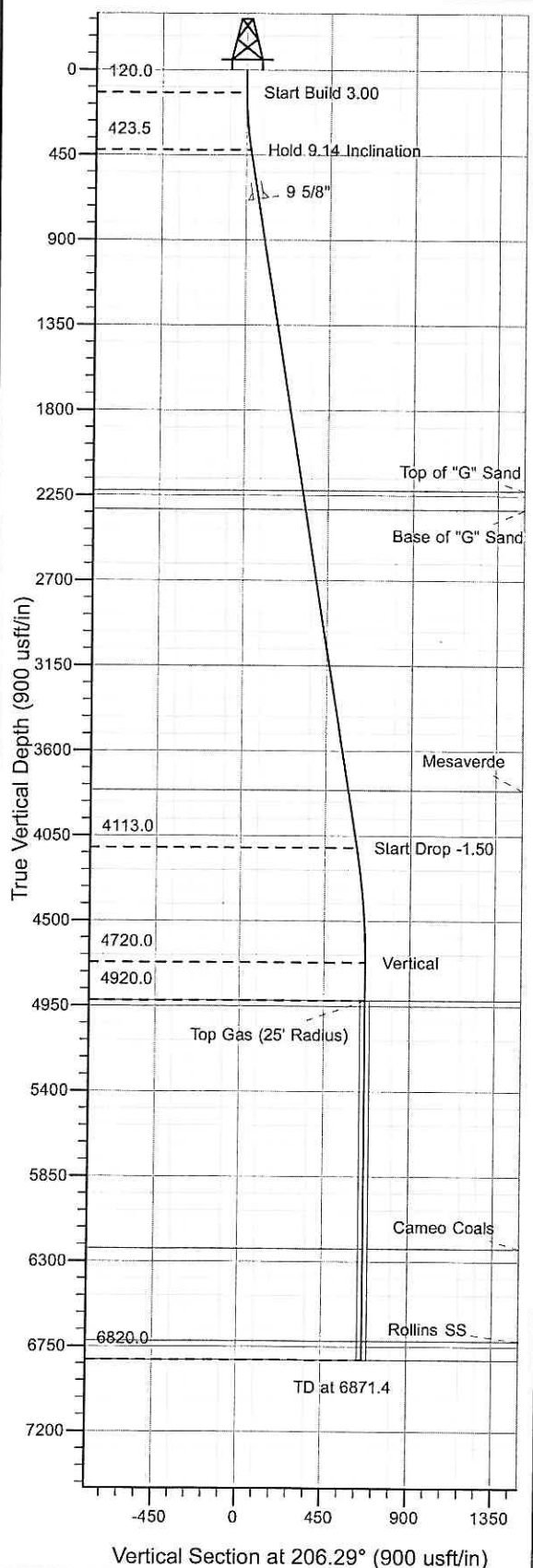




Well Name: GM 433-31  
 Surface Location: GM 333-31 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 6100.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1610352.50 2252760.60 39° 28' 45.468 N 108° 8' 51.537 W A11  
 KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)



Project: GV 31-06S-096W  
 Site: GM 333-31 Pad  
 Well: GM 433-31  
 Plan #2 14Jul09 kjs



Azimuths to True North  
 Magnetic North: 10.75°  
 Magnetic Field  
 Strength: 52516.5nT  
 Dip Angle: 65.78°  
 Date: 9/30/2008  
 Model: IGRF2005-10

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.00
423.5	424.8	9.14	206.29	-21.8	-10.8	24.3	24.3	Hold 9.14 Inclination
4113.0	4161.8	9.14	206.29	-554.2	-273.8	618.1	618.1	Start Drop -1.50
4720.0	4771.4	0.00	0.00	-597.7	-295.3	666.7	666.7	Vertical
4920.0	4971.4	0.00	0.00	-597.7	-295.3	666.7	666.7	Top Gas
6820.0	6871.4	0.00	0.00	-597.7	-295.3	666.7	666.7	TD at 6871.4

# **PICEANCE VLY NAD 83**

**GV 31-06S-096W**

**GM 333-31 Pad**

**GM 433-31 - Slot A11**

**Wellbore #1**

**Plan: Plan #2 14Jul09 kjs**

## **Standard Planning Report - Geographic**

**09 March, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well GM 433-31 - Slot A11
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)
<b>Project:</b>	GV 31-06S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)
<b>Site:</b>	GM 333-31 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 433-31	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 14Jul09 kjs		

<b>Project</b>	GV 31-06S-096W, Garfield County, CO, 31-06S-096W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		Using geodetic scale factor

Site		GM 333-31 Pad			
Site Position:		Northing:	1,610,367.10 usft	Latitude:	39° 28' 45.634 N
From:	Map	Easting:	2,252,834.10 usft	Longitude:	108° 8' 50.606 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.670 °

Well	GM 433-31 - Slot A11					
Well Position	+N/-S	0.0 usft	Northing:	1,610,352.50 usft	Latitude:	39° 28' 45.468 N
	+E/-W	0.0 usft	Easting:	2,252,760.60 usft	Longitude:	108° 8' 51.537 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,100.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2005-10	9/30/2008	10.747	65.779	52,517

<b>Design</b>	Plan #2 14Jul09 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	206.29

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.000	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
424.8	9.14	206.29	423.5	-21.8	-10.8	3.00	3.00	0.00	206.294	
4,161.8	9.14	206.29	4,113.0	-554.2	-273.8	0.00	0.00	0.00	0.000	
4,771.4	0.00	0.00	4,720.0	-597.7	-295.3	1.50	-1.50	0.00	180.000	
4,971.4	0.00	0.00	4,920.0	-597.7	-295.3	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
6,871.4	0.00	0.00	6,820.0	-597.7	-295.3	0.00	0.00	0.00	0.000	

**Williams**  
Planning Report - Geographic

**Database:** Compass R5000 WIN AUTH  
**Company:** PICEANCE VLY NAD 83  
  
**Project:** GV 31-06S-096W  
  
**Site:** GM 333-31 Pad  
**Well:** GM 433-31  
**Wellbore:** Wellbore #1  
**Design:** Plan #2 14Jul09 kjs

**Local Co-ordinate Reference:** Well GM 433-31 - Slot A11  
**TVD Reference:** KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)  
**MD Reference:** KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,610,352.50	2,252,760.60	39° 28' 45.468 N	108° 8' 51.537 W
120.0	0.00	0.00	120.0	0.0	0.0	1,610,352.50	2,252,760.60	39° 28' 45.468 N	108° 8' 51.537 W
<b>Start Build 3.00</b>									
424.8	9.14	206.29	423.5	-21.8	-10.8	1,610,331.06	2,252,749.22	39° 28' 45.253 N	108° 8' 51.675 W
<b>Hold 9.14 Inclination</b>									
687.0	9.14	206.29	682.4	-59.1	-29.2	1,610,294.26	2,252,729.68	39° 28' 44.884 N	108° 8' 51.910 W
<b>9 5/8"</b>									
2,248.5	9.14	206.29	2,224.0	-281.6	-139.1	1,610,075.10	2,252,613.33	39° 28' 42.685 N	108° 8' 53.312 W
<b>Top of "G" Sand</b>									
2,349.8	9.14	206.29	2,324.0	-296.0	-146.3	1,610,060.89	2,252,605.78	39° 28' 42.543 N	108° 8' 53.403 W
<b>Base of "G" Sand</b>									
3,853.9	9.14	206.29	3,809.0	-510.3	-252.1	1,609,849.78	2,252,493.70	39° 28' 40.425 N	108° 8' 54.753 W
<b>Mesaverde</b>									
4,161.8	9.14	206.29	4,113.0	-554.2	-273.8	1,609,806.57	2,252,470.76	39° 28' 39.991 N	108° 8' 55.030 W
<b>Start Drop -1.50</b>									
4,771.4	0.00	0.00	4,720.0	-597.7	-295.3	1,609,763.70	2,252,448.00	39° 28' 39.561 N	108° 8' 55.304 W
<b>Vertical</b>									
4,971.4	0.00	0.00	4,920.0	-597.7	-295.3	1,609,763.70	2,252,448.00	39° 28' 39.561 N	108° 8' 55.304 W
<b>Top Gas - Approx. Top Gas</b>									
6,283.4	0.00	0.00	6,232.0	-597.7	-295.3	1,609,763.70	2,252,448.00	39° 28' 39.561 N	108° 8' 55.304 W
<b>Cameo Coals</b>									
6,771.4	0.00	0.00	6,720.0	-597.7	-295.3	1,609,763.70	2,252,448.00	39° 28' 39.561 N	108° 8' 55.304 W
<b>Rollins SS</b>									
6,871.4	0.00	0.00	6,820.0	-597.7	-295.3	1,609,763.70	2,252,448.00	39° 28' 39.561 N	108° 8' 55.304 W
<b>TD at 6871.4 - TD</b>									

**Design Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (25' Radius) GI - plan hits target center - Circle (radius 25.0)	0.00	0.00	4,920.0	-597.7	-295.3	1,609,763.70	2,252,448.00	39° 28' 39.561 N	108° 8' 55.304 W

**Casing Points**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
687.0	682.4	9 5/8"	9.625	12.250

**Williams**  
Planning Report - Geographic

**Database:** Compass R5000 WIN AUTH  
**Company:** PICEANCE VLY NAD 83  
**Project:** GV 31-06S-096W  
**Site:** GM 333-31 Pad  
**Well:** GM 433-31  
**Wellbore:** Wellbore #1  
**Design:** Plan #2 14Jul09 kjs

**Local Co-ordinate Reference:** Well GM 433-31 - Slot A11  
**TVD Reference:** KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)  
**MD Reference:** KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,248.5	2,224.0	Top of "G" Sand			
2,349.8	2,324.0	Base of "G" Sand			
3,853.9	3,809.0	Mesaverde			
4,971.4	4,920.0	Approx. Top Gas			
6,283.4	6,232.0	Cameo Coals			
6,771.4	6,720.0	Rollins SS			
6,871.4	6,820.0	TD			

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.0	120.0	0.0	0.0	Start Build 3.00
424.8	423.5	-21.8	-10.8	Hold 9.14 Inclination
4,161.8	4,113.0	-554.2	-273.8	Start Drop -1.50
4,771.4	4,720.0	-597.7	-295.3	Vertical
4,971.4	4,920.0	-597.7	-295.3	Top Gas
6,871.4	6,820.0	-597.7	-295.3	TD at 6871.4