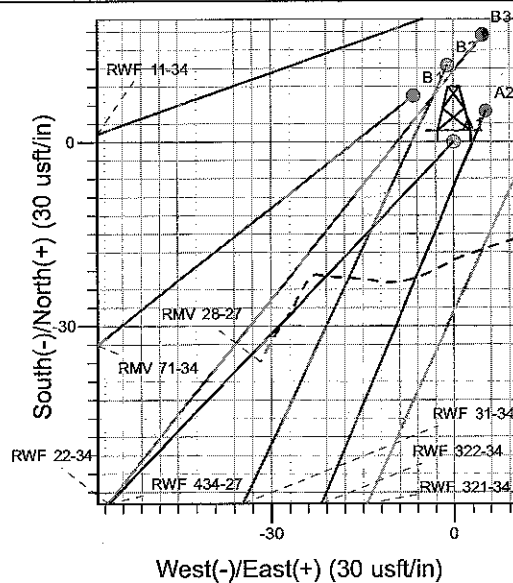
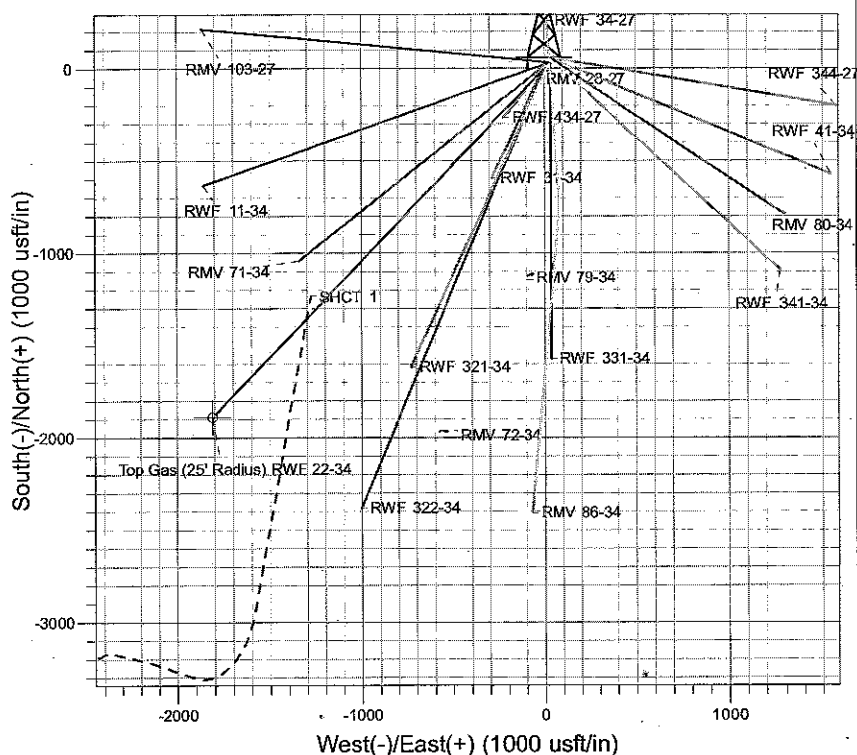
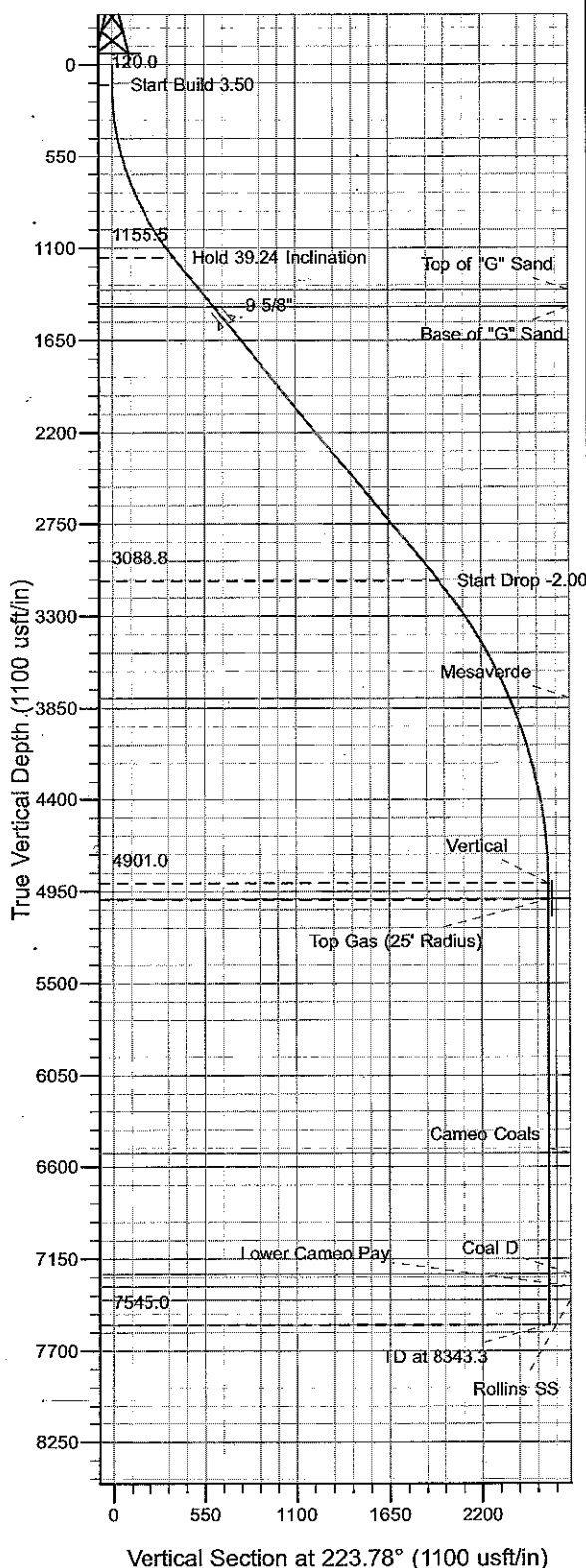
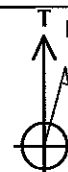




Well Name: RWF 22-34  
 Surface Location: RMV 28-27 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5297.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1612152.10 2330484.70 39° 29' 24.471 N 107° 52' 21.191 W A1  
 KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)



Project: RU 27-06S-094W  
 Site: RMV 28-27 Pad  
 Well: RWF 22-34  
 Plan #2 20Apr10 kjs



Azimuths to True North  
 Magnetic North: 10.70°  
 Magnetic Field  
 Strength: 52620.9nT  
 Dip Angle: 65.85°  
 Date: 3/7/2008  
 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 3.50
1155.5	1241.2	39.24	223.78	-266.5	-255.4	369.1	369.1	Hold 39.24 Inclination
3088.8	3737.3	39.24	223.78	-1406.5	-1348.0	1948.2	1948.2	Start Drop -2.00
4901.0	5699.3	0.00	0.00	-1872.9	-1795.0	2594.2	2594.2	Vertical
5001.0	5799.3	0.00	0.00	-1872.9	-1795.0	2594.2	2594.2	Top Gas
7545.0	8343.3	0.00	0.00	-1872.9	-1795.0	2594.2	2594.2	TD at 8343.3

# **PICEANCE VLY NAD 83**

**RU 27-06S-094W**

**RMV 28-27 Pad**

**RWF 22-34 - Slot A1**

**Wellbore #1**

**Plan: Plan #2 20Apr10 kjs**

## **Standard Planning Report - Geographic**

**07 July, 2010**

# Williams

## Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 22-34 - Slot A1
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	RU 27-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	RMV 28-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 22-34	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 20Apr10 kjs		

<b>Project</b>	RU 27-06S-094W, Garfield County, CO, 27-06S-094W		
<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

<b>Site</b>	RMV 28-27 Pad		
<b>Site Position:</b>		<b>Northing:</b>	1,612,143.20 usft
<b>From:</b>	Map	<b>Easting:</b>	2,330,505.00 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39° 29' 24.388 N
		<b>Longitude:</b>	107° 52' 20.929 W
		<b>Grid Convergence:</b>	-1.50 °

<b>Well</b>	RWF 22-34 - Slot A1		
<b>Well Position</b>	+N/-S	0.0 usft	<b>Northing:</b> 1,612,152.10 usft
	+E/-W	0.0 usft	<b>Easting:</b> 2,330,484.70 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 39° 29' 24.471 N
			<b>Longitude:</b> 107° 52' 21.191 W
			<b>Ground Level:</b> 5,297.0 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	3/7/2008	10.70	65.85	52,621

<b>Design</b>	Plan #2 20Apr10 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)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	223.78

Plan Sections										
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	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,241.2	39.24	223.78	1,155.5	-266.5	-255.4	3.50	3.50	0.00	223.78	
3,737.3	39.24	223.78	3,088.8	-1,406.5	-1,348.0	0.00	0.00	0.00	0.00	
5,699.3	0.00	0.00	4,901.0	-1,872.9	-1,795.0	2.00	-2.00	0.00	180.00	
5,799.3	0.00	0.00	5,001.0	-1,872.9	-1,795.0	0.00	0.00	0.00	0.00	Top Gas (25' Radius)
8,343.3	0.00	0.00	7,545.0	-1,872.9	-1,795.0	0.00	0.00	0.00	0.00	

# Williams

## Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 22-34 - Slot A1
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	RU 27-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	RMV 28-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 22-34	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 20Apr10 kjs		

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	1,612,152.10	2,330,484.70	39° 29' 24.471 N	107° 52' 21.191 W	
120.0	0.00	0.00	120.0	0.0	0.0	1,612,152.10	2,330,484.70	39° 29' 24.471 N	107° 52' 21.191 W	
Start Build 3.50										
1,241.2	39.24	223.78	1,155.5	-266.5	-255.4	1,611,892.36	2,330,222.41	39° 29' 21.837 N	107° 52' 24.449 W	
Hold 39.24 Inclination										
1,492.2	39.24	223.78	1,350.0	-381.2	-365.3	1,611,780.61	2,330,109.56	39° 29' 20.703 N	107° 52' 25.851 W	
Top of "G" Sand										
1,621.3	39.24	223.78	1,450.0	-440.1	-421.8	1,611,723.14	2,330,051.53	39° 29' 20.121 N	107° 52' 26.572 W	
Base of "G" Sand										
1,750.5	39.24	223.78	1,550.0	-499.1	-478.4	1,611,665.67	2,329,993.49	39° 29' 19.538 N	107° 52' 27.292 W	
9 5/8"										
3,737.3	39.24	223.78	3,088.8	-1,406.5	-1,348.0	1,610,781.36	2,329,100.48	39° 29' 10.570 N	107° 52' 38.384 W	
Start Drop -2.00										
4,558.4	22.82	223.78	3,790.0	-1,711.0	-1,639.9	1,610,484.57	2,328,800.78	39° 29' 7.560 N	107° 52' 42.107 W	
Mesaverde										
5,699.3	0.00	0.00	4,901.0	-1,872.9	-1,795.0	1,610,326.82	2,328,641.47	39° 29' 5.960 N	107° 52' 44.085 W	
Vertical										
5,793.3	0.00	0.00	4,995.0	-1,872.9	-1,795.0	1,610,326.82	2,328,641.47	39° 29' 5.960 N	107° 52' 44.085 W	
Approx. Top Gas										
5,799.3	0.00	0.00	5,001.0	-1,872.9	-1,795.0	1,610,326.82	2,328,641.47	39° 29' 5.960 N	107° 52' 44.085 W	
Top Gas										
7,318.3	0.00	0.00	6,520.0	-1,872.9	-1,795.0	1,610,326.82	2,328,641.47	39° 29' 5.960 N	107° 52' 44.085 W	
Cameo Coals										
8,038.3	0.00	0.00	7,240.0	-1,872.9	-1,795.0	1,610,326.82	2,328,641.47	39° 29' 5.960 N	107° 52' 44.085 W	
Coal D										
8,113.3	0.00	0.00	7,315.0	-1,872.9	-1,795.0	1,610,326.82	2,328,641.47	39° 29' 5.960 N	107° 52' 44.085 W	
Lower Cameo Pay										
8,193.3	0.00	0.00	7,395.0	-1,872.9	-1,795.0	1,610,326.82	2,328,641.47	39° 29' 5.960 N	107° 52' 44.085 W	
Rollins SS										
8,343.3	0.00	0.00	7,545.0	-1,872.9	-1,795.0	1,610,326.82	2,328,641.47	39° 29' 5.960 N	107° 52' 44.085 W	
TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Top Gas (25' Radius) R1	0.00	0.00	4,995.0	-1,888.1	-1,810.1	1,610,312.00	2,328,626.00	39° 29' 5.810 N	107° 52' 44.277 W	
- plan misses target center by 21.4usft at 5793.3usft MD (4995.0 TVD, -1872.9 N, -1795.0 E)										
- Circle (radius 25.0)										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,750.5	1,550.0	9 5/8"	9-5/8	12-1/4	

# Williams

## Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 22-34 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
Project:	RU 27-06S-094W	MD Reference:	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
Site:	RMV 28-27 Pad	North Reference:	True
Well:	RWF 22-34	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 20Apr10 kjs		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,492.2	1,350.0	Top of "G" Sand			
1,621.3	1,450.0	Base of "G" Sand			
4,558.4	3,790.0	Mesaverde			
5,793.3	4,995.0	Approx. Top Gas			
7,318.3	6,520.0	Cameo Coals			
8,038.3	7,240.0	Coal D			
8,113.3	7,315.0	Lower Cameo Pay			
8,193.3	7,395.0	Rollins SS			
8,343.3	7,545.0	TD		0.00	

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 3.50
1,241.2	1,155.5	-266.5	-255.4	Hold 39.24 Inclination
3,737.3	3,088.8	-1,406.5	-1,348.0	Start Drop -2.00
5,699.3	4,901.0	-1,872.9	-1,795.0	Vertical
5,799.3	5,001.0	-1,872.9	-1,795.0	Top Gas
8,343.3	7,545.0	-1,872.9	-1,795.0	TD at 8343.3