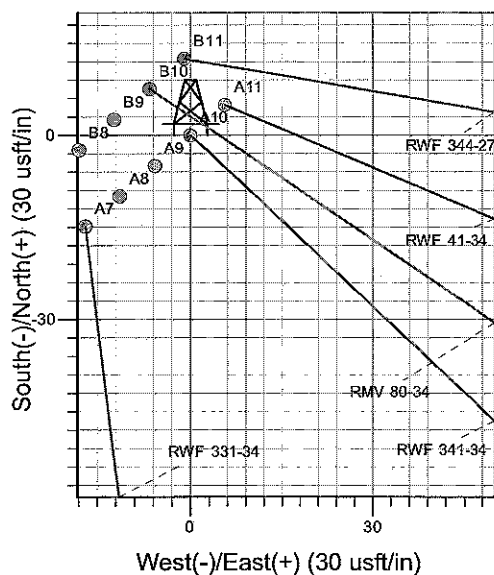
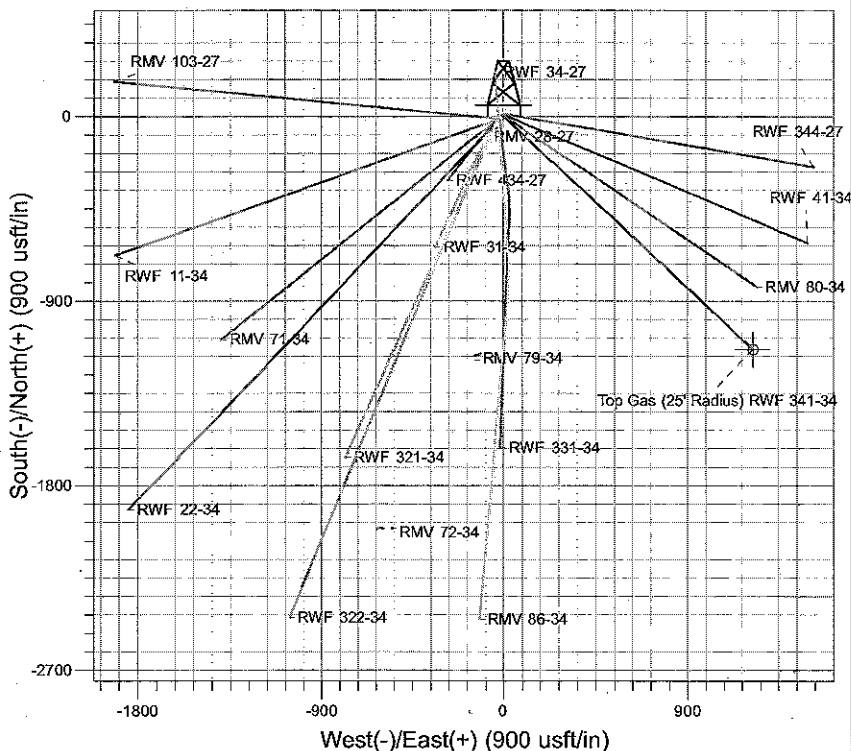
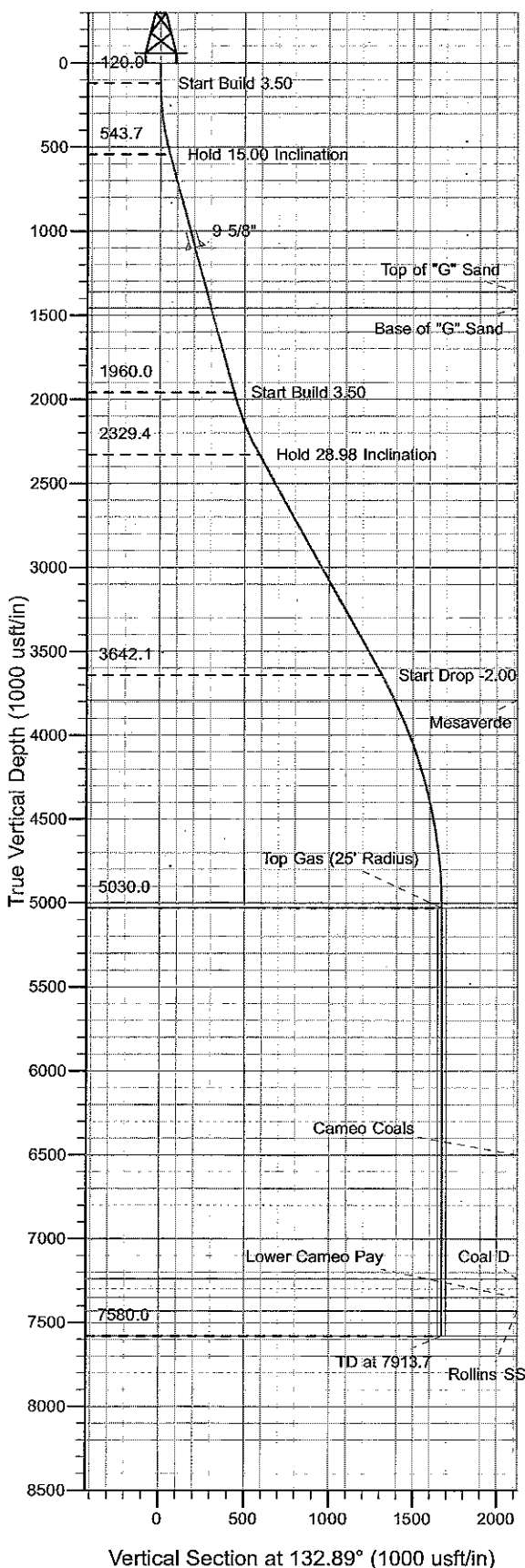




Well Name: RWF 341-34  
 Surface Location: RMV 28-27 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5297.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1612195.40 2330536.50 39° 29' 24.912 N 107° 52' 20.545 W A10  
 KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)



Project: RU 27-06S-094W  
 Site: RMV 28-27 Pad  
 Well: RWF 341-34  
 Plan #2 20Apr10 kjs

Azimuths to True North  
 Magnetic North: 10.70°  
 Magnetic Field  
 Strength: 52621.0snT  
 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
543.7	548.6	15.00	132.88	-38.0	40.9	55.8	55.8	Hold 15.00 Inclination
1960.0	2014.8	15.00	132.88	-296.2	319.0	435.3	435.3	Start Build 3.50
2329.4	2414.2	28.98	132.89	-397.7	428.2	584.4	584.4	Hold 28.98 Inclination
3642.1	3914.8	28.98	132.89	-892.5	960.9	1311.4	1311.4	Start Drop -2.00
5030.0	5363.7	0.00	0.00	-1136.6	1223.6	1670.1	1670.1	Top Gas
7580.0	7913.7	0.00	0.00	-1136.6	1223.6	1670.1	1670.1	TD at 7913.7

# **PICEANCE VLY NAD 83**

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

**RMV 28-27 Pad**

**RWF 341-34 - Slot A10**

**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 341-34 - Slot A10
<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 341-34	<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 341-34 - Slot A10		
<b>Well Position</b>	+N-S	0.0 usft	<b>Northing:</b> 1,612,195.40 usft
	+E-W	0.0 usft	<b>Easting:</b> 2,330,536.50 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 39° 29' 24.912 N
			<b>Longitude:</b> 107° 52' 20.545 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) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	132.89

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	
548.6	15.00	132.88	543.7	-38.0	40.9	3.50	3.50	0.00	132.88	
2,014.8	15.00	132.88	1,960.0	-296.2	319.0	0.00	0.00	0.00	0.00	
2,414.2	28.98	132.89	2,329.4	-397.7	428.2	3.50	3.50	0.00	0.00	
3,914.8	28.98	132.89	3,642.1	-892.5	960.9	0.00	0.00	0.00	0.00	
5,363.7	0.00	0.00	5,030.0	-1,136.6	1,223.6	2.00	-2.00	0.00	180.00	Top Gas (25' Radius)
7,913.7	0.00	0.00	7,580.0	-1,136.6	1,223.6	0.00	0.00	0.00	0.00	

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 341-34 - Slot A10
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 341-34	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	1,612,195.40	2,330,536.50	39° 29' 24.912 N	107° 52' 20.545 W	
120.0	0.00	0.00	120.0	0.0	0.0	1,612,195.40	2,330,536.50	39° 29' 24.912 N	107° 52' 20.545 W	
Start Build 3.50										
548.6	15.00	132.88	543.7	-38.0	40.9	1,612,156.39	2,330,576.37	39° 29' 24.537 N	107° 52' 20.023 W	
Hold 15.00 Inclination										
1,124.5	15.00	132.88	1,100.0	-139.4	150.1	1,612,052.14	2,330,682.91	39° 29' 23.534 N	107° 52' 18.630 W	
9 5/8"										
1,393.7	15.00	132.88	1,360.0	-186.8	201.2	1,612,003.42	2,330,732.70	39° 29' 23.066 N	107° 52' 17.979 W	
Top of "G" Sand										
1,497.2	15.00	132.88	1,460.0	-205.0	220.8	1,611,984.68	2,330,751.85	39° 29' 22.886 N	107° 52' 17.729 W	
Base of "G" Sand										
2,014.8	15.00	132.88	1,960.0	-296.2	319.0	1,611,890.99	2,330,847.61	39° 29' 21.985 N	107° 52' 16.476 W	
Start Build 3.50										
2,414.2	28.98	132.89	2,329.4	-397.7	428.2	1,611,786.65	2,330,954.20	39° 29' 20.981 N	107° 52' 15.082 W	
Hold 28.98 Inclination										
3,914.8	28.98	132.89	3,642.1	-892.5	960.9	1,611,278.16	2,331,473.71	39° 29' 16.091 N	107° 52' 8.289 W	
Start Drop -2.00										
4,081.3	25.65	132.89	3,790.0	-944.5	1,016.8	1,611,224.73	2,331,528.29	39° 29' 15.577 N	107° 52' 7.575 W	
Mesaverde										
5,363.7	0.00	0.00	5,030.0	-1,136.6	1,223.6	1,611,027.30	2,331,730.00	39° 29' 13.678 N	107° 52' 4.938 W	
Top Gas - Approx. Top Gas										
6,833.7	0.00	0.00	6,500.0	-1,136.6	1,223.6	1,611,027.30	2,331,730.00	39° 29' 13.678 N	107° 52' 4.938 W	
Cameo Coals										
7,573.7	0.00	0.00	7,240.0	-1,136.6	1,223.6	1,611,027.30	2,331,730.00	39° 29' 13.678 N	107° 52' 4.938 W	
Coal D										
7,683.7	0.00	0.00	7,350.0	-1,136.6	1,223.6	1,611,027.30	2,331,730.00	39° 29' 13.678 N	107° 52' 4.938 W	
Lower Cameo Pay										
7,763.7	0.00	0.00	7,430.0	-1,136.6	1,223.6	1,611,027.30	2,331,730.00	39° 29' 13.678 N	107° 52' 4.938 W	
Rollins SS										
7,913.7	0.00	0.00	7,580.0	-1,136.6	1,223.6	1,611,027.30	2,331,730.00	39° 29' 13.678 N	107° 52' 4.938 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	5,030.0	-1,136.6	1,223.6	1,611,027.30	2,331,730.00	39° 29' 13.678 N	107° 52' 4.938 W	
- plan hits target center										
- Circle (radius 25.0)										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,124.5	1,100.0	9 5/8"	9-5/8	12-1/4	

# Williams

## Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 341-34 - Slot A10
<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 341-34	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 20Apr10 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Direction (°)	
1,393.7	1,360.0	Top of "G" Sand				
1,497.2	1,460.0	Base of "G" Sand				
4,081.3	3,790.0	Mesaverde				
5,363.7	5,030.0	Approx. Top Gas				
6,833.7	6,500.0	Cameo Coals				
7,573.7	7,240.0	Coal D				
7,683.7	7,350.0	Lower Cameo Pay				
7,763.7	7,430.0	Rollins SS				
7,913.7	7,580.0	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.0	120.0	0.0	0.0	Start Build 3.50	
548.6	543.7	-38.0	40.9	Hold 15.00 Inclination	
2,014.8	1,960.0	-296.2	319.0	Start Build 3.50	
2,414.2	2,329.4	-397.7	428.2	Hold 28.98 Inclination	
3,914.8	3,642.1	-892.5	960.9	Start Drop -2.00	
5,363.7	5,030.0	-1,136.6	1,223.6	Top Gas	
7,913.7	7,580.0	-1,136.6	1,223.6	TD at 7913.7	