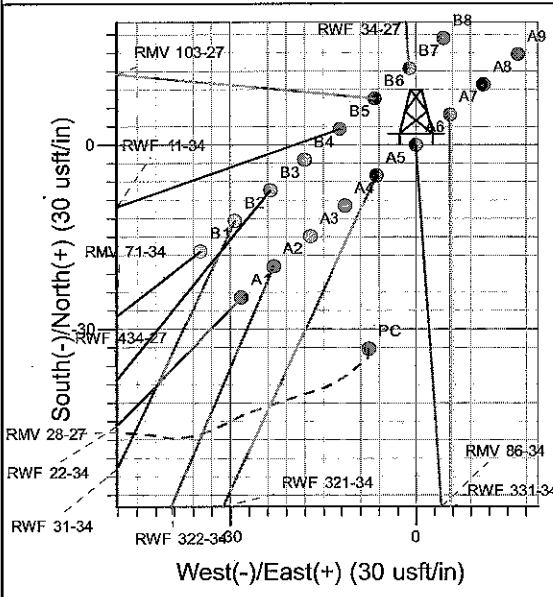
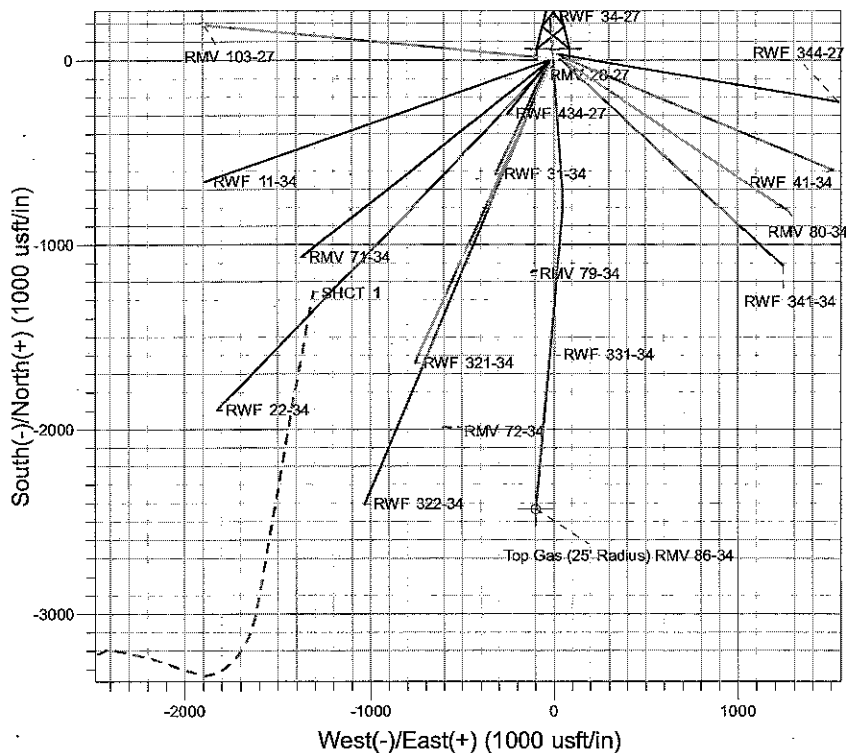
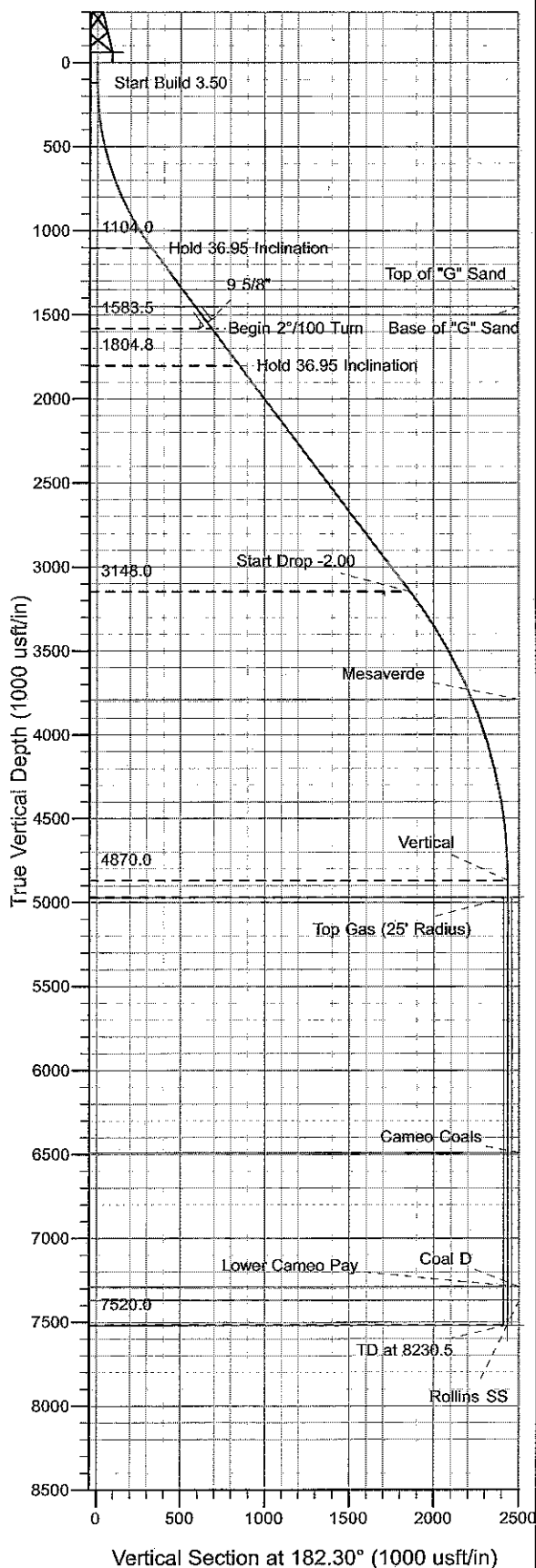




Well Name: RMV 86-34  
 Surface Location: RMV 28-27 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5297.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1612176.20 2330513.50 39° 29' 24.716 N 107° 52' 20.832 W A6  
 KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)



Project: RU 27-06S-094W  
 Site: RMV 28-27 Pad  
 Well: RMV 86-34  
 Plan #2 20Apr10 kjs

Azimuths to True North  
 Magnetic North: 10.70°  
 Magnetic Field  
 Strength: 52620.2snT  
 Dip Angle: 65.85°  
 Date: 3/10/2008  
 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
1104.0	1175.7	36.95	176.00	-328.0	22.9	326.8	328.8	Hold 36.95 Inclination
1583.5	1775.7	36.95	176.00	-687.8	48.1	685.3	689.4	Begin 2°/100 Turn
1804.8	2052.3	36.95	185.21	-853.6	46.3	851.1	855.5	Hold 36.95 Inclination
3148.0	3733.1	36.95	185.21	-1859.7	-45.4	1860.1	1865.8	Start Drop -2.00
4870.0	5580.5	0.00	0.00	-2432.7	-97.6	2434.6	2441.1	Vertical
4970.0	5680.5	0.00	0.00	-2432.7	-97.6	2434.6	2441.1	Top Gas
7520.0	8230.5	0.00	0.00	-2432.7	-97.6	2434.6	2441.1	TD at 8230.5

# **PICEANCE VLY NAD 83**

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

**RMV 28-27 Pad**

**RMV 86-34 - Slot A6**

**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 RMV 86-34 - Slot A6
<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>	RMV 86-34	<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>	RMV 86-34 - Slot A6		
<b>Well Position</b>	+N/-S	0.0 usft	<b>Northing:</b> 1,612,176.20 usft
	+E/-W	0.0 usft	<b>Easting:</b> 2,330,513.50 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 39° 29' 24.716 N
			<b>Longitude:</b> 107° 52' 20.832 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>
	IGRF2005-10	3/10/2008	10.70
			<b>Dip Angle (°)</b> 65.85
			<b>Field Strength (nT)</b> 52,620

<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>
	(usft)	(usft)	<b>Direction (°)</b>
	0.0	0.0	0.0
			182.30

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	
1,175.7	36.95	176.00	1,104.0	-328.0	22.9	3.50	3.50	0.00	176.00	
1,775.7	36.95	176.00	1,583.5	-687.8	48.1	0.00	0.00	0.00	0.00	
2,052.3	36.95	185.21	1,804.8	-853.6	46.3	2.00	0.00	3.33	93.70	
3,733.1	36.95	185.21	3,148.0	-1,859.7	-45.4	0.00	0.00	0.00	0.00	
5,580.5	0.00	0.00	4,870.0	-2,432.7	-97.6	2.00	-2.00	0.00	180.00	
8,230.5	0.00	0.00	7,520.0	-2,432.7	-97.6	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 RMV 86-34 - Slot A6
<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>	RMV 86-34	<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	1,612,176.20	2,330,513.50	39° 29' 24.716 N	107° 52' 20.832 W
120.0	0.00	0.00	120.0	0.0	0.0	1,612,176.20	2,330,513.50	39° 29' 24.716 N	107° 52' 20.832 W
Start Build 3.50									
1,175.7	36.95	176.00	1,104.0	-328.0	22.9	1,611,847.74	2,330,527.86	39° 29' 21.475 N	107° 52' 20.539 W
Hold 36.95 Inclination									
1,483.5	36.95	176.00	1,350.0	-512.5	35.8	1,611,662.92	2,330,535.95	39° 29' 19.651 N	107° 52' 20.375 W
Top of "G" Sand									
1,608.6	36.95	176.00	1,450.0	-587.6	41.1	1,611,587.78	2,330,539.23	39° 29' 18.909 N	107° 52' 20.308 W
Base of "G" Sand									
1,733.7	36.95	176.00	1,550.0	-662.6	46.3	1,611,512.64	2,330,542.52	39° 29' 18.168 N	107° 52' 20.241 W
9 5/8"									
1,775.7	36.95	176.00	1,583.5	-687.8	48.1	1,611,487.43	2,330,543.62	39° 29' 17.919 N	107° 52' 20.218 W
Begin 2°/100 Turn									
2,052.3	36.95	185.21	1,804.8	-853.6	46.3	1,611,321.70	2,330,537.54	39° 29' 16.280 N	107° 52' 20.241 W
Hold 36.95 Inclination									
3,733.1	36.95	185.21	3,148.0	-1,859.7	-45.4	1,610,318.35	2,330,419.58	39° 29' 6.336 N	107° 52' 21.411 W
Start Drop -2.00									
4,473.1	22.15	185.21	3,790.0	-2,222.2	-78.4	1,609,956.91	2,330,377.08	39° 29' 2.754 N	107° 52' 21.832 W
Mesaverde									
5,580.5	0.00	0.00	4,870.0	-2,432.7	-97.6	1,609,747.00	2,330,352.40	39° 29' 0.674 N	107° 52' 22.077 W
Vertical									
5,680.5	0.00	0.00	4,970.0	-2,432.7	-97.6	1,609,747.00	2,330,352.40	39° 29' 0.674 N	107° 52' 22.077 W
Top Gas - Approx. Top Gas									
7,200.5	0.00	0.00	6,490.0	-2,432.7	-97.6	1,609,747.00	2,330,352.40	39° 29' 0.674 N	107° 52' 22.077 W
Cameo Coals									
8,000.5	0.00	0.00	7,290.0	-2,432.7	-97.6	1,609,747.00	2,330,352.40	39° 29' 0.674 N	107° 52' 22.077 W
Coal D - Lower Cameo Pay									
8,080.5	0.00	0.00	7,370.0	-2,432.7	-97.6	1,609,747.00	2,330,352.40	39° 29' 0.674 N	107° 52' 22.077 W
Rollins SS									
8,230.5	0.00	0.00	7,520.0	-2,432.7	-97.6	1,609,747.00	2,330,352.40	39° 29' 0.674 N	107° 52' 22.077 W
TD at 8230.5									

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) Rf	0.00	0.00	4,970.0	-2,432.7	-97.6	1,609,747.00	2,330,352.40	39° 29' 0.674 N	107° 52' 22.077 W
- plan hits target center									
- Circle (radius 25.0)									
TD / PBHL RMV 86-34	0.00	0.00	7,520.0	-2,432.7	-97.6	1,609,747.00	2,330,352.40	39° 29' 0.674 N	107° 52' 22.077 W
- plan hits target center									
- Point									

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RMV 86-34 - Slot A6
<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>	RMV 86-34	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 20Apr10 kjs		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,733.7	1,550.0	9 5/8"	9-5/8	12-1/4

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction	
1,483.5	1,350.0	Top of "G" Sand				
1,608.6	1,450.0	Base of "G" Sand				
4,473.1	3,790.0	Mesaverde				
5,680.5	4,970.0	Approx. Top Gas				
7,200.5	6,490.0	Cameo Coals				
8,000.5	7,290.0	Coal D				
8,000.5	7,290.0	Lower Cameo Pay				
8,080.5	7,370.0	Rollins SS				
8,230.5	7,520.0	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	
1,175.7	1,104.0	-328.0	22.9	Hold 36.95 Inclination	
1,775.7	1,583.5	-687.8	48.1	Begin 2°/100 Turn	
2,052.3	1,804.8	-853.6	46.3	Hold 36.95 Inclination	
3,733.1	3,148.0	-1,859.7	-45.4	Start Drop -2.00	
5,580.5	4,870.0	-2,432.7	-97.6	Vertical	
5,680.5	4,970.0	-2,432.7	-97.6	Top Gas	
8,230.5	7,520.0	-2,432.7	-97.6	TD at 8230.5	

PICEANCE VLY NAD 83



Well Name: SG 433-32  
 Surface Location: SG 33-32 Pad  
 North American Datum 1983 , US State Plane 1983. Colorado Central Zone  
 Ground Elevation: 5092.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
-17.0	-24.7	1577525.91	2256523.31	39° 23' 22.235 N	108° 7' 51.445 W	B7

KB @ 5118.0usft (Nabors 576 (26' RKB) rjc)

