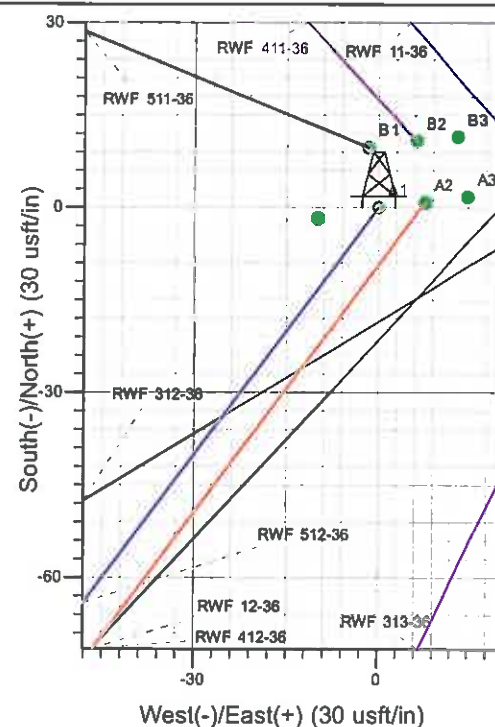
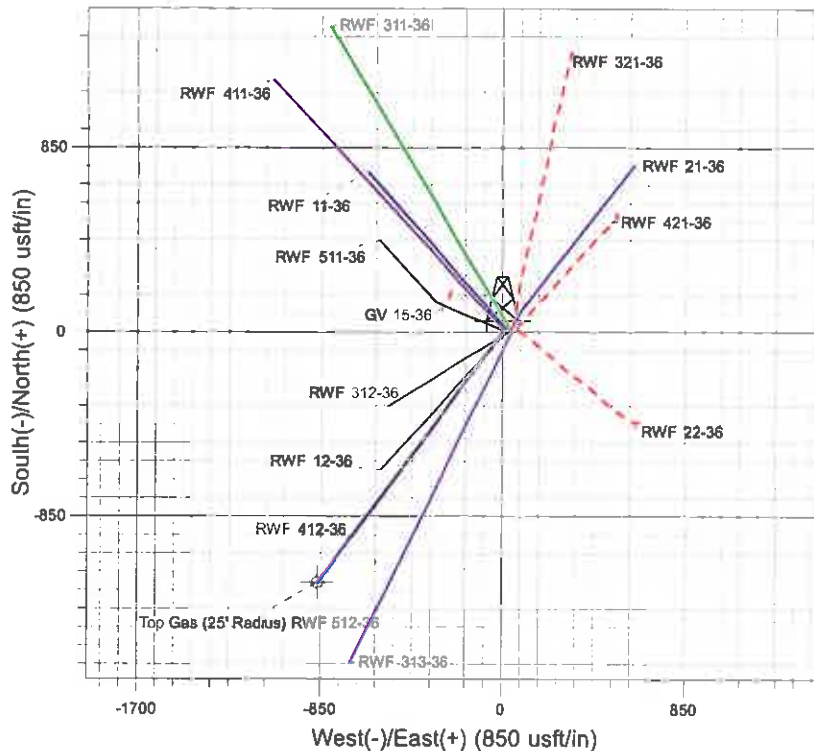
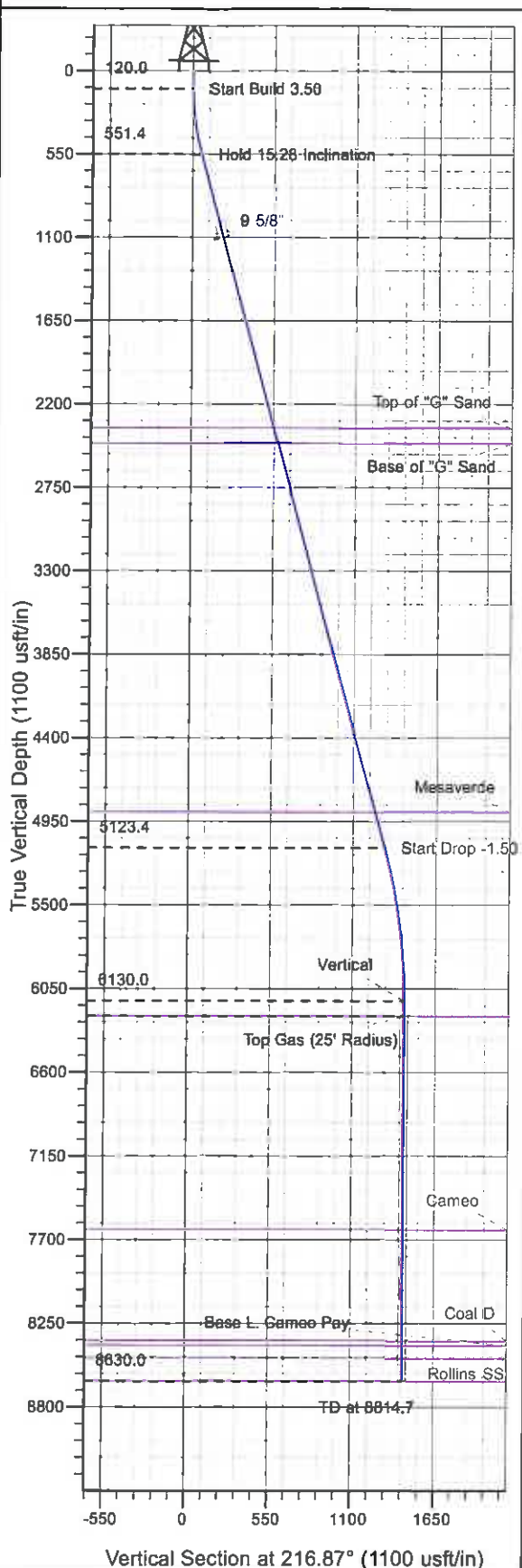




Well Name: RWF 512-36  
 Surface Location: GV 15-36 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 6387.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1610106.90 2339631.10 39° 29' 6.608 N 107° 50' 23.888 W A1  
 KELLY BUSHING @ 6411.0usft (H&P 271 (24' RKB) kjs)



Project: RU 36-06S-094W  
 Site: GV 15-36 Pad  
 Well: RWF 512-36  
 Plan #4 01Mar11 kjs

M Azimuths to True North  
 Magnetic North: 10.62°  
 Magnetic Field  
 Strength: 52567.0snT  
 Dip Angle: 65.84°  
 Date: 8/29/2008  
 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
551.4	556.6	15.28	216.87	-48.3	-34.7	57.9	57.9	Hold 15.28 Inclination
5123.4	5298.1	15.28	216.87	-1045.5	-784.2	1306.9	1306.9	Start Drop -1.50
6130.0	6314.7	0.00	0.00	-1153.5	-865.2	1441.9	1441.9	Vertical
6230.0	6414.7	0.00	0.00	-1153.5	-865.2	1441.9	1441.9	Top Gas
8630.0	8814.7	0.00	0.00	-1153.5	-865.2	1441.9	1441.9	TD at 8814.7

# **PICEANCE VLY NAD 83**

**RU 36-06S-094W**

**GV 15-36 Pad**

**RWF 512-36 - Slot A1**

**Wellbore #1**

**Plan: Plan #4 01Mar11 kjs**

## **Standard Planning Report - Geographic**

**26 April, 2011**

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 512-36 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6411.0usft (H&P 271 (24' RKB) kjs)
Project:	RU 36-06S-094W	MD Reference:	KELLY BUSHING @ 6411.0usft (H&P 271 (24' RKB) kjs)
Site:	GV 15-36 Pad	North Reference:	True
Well:	RWF 512-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 01Mar11 kjs		

Project	RU 36-06S-094W, Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site	GV 15-36 Pad			
Site Position:		Northing:	1,610,105.50 usft	Latitude: 39° 29' 6.592 N
From:	Map	Easting:	2,339,621.10 usft	Longitude: 107° 50' 24.015 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence: -1.476 °

Well	RWF 512-36 - Slot A1			
Well Position	+N/-S	0.0 usft	Northing:	1,610,106.90 usft
	+E/-W	0.0 usft	Easting:	2,339,631.10 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level: 6,387.0 usft

Wellbore	Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)
	IGRF2005-10	8/29/2008	10.621	65.845
				Field Strength (nT)
				52,567

Design	Plan #4 01Mar11 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	216.87

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	0.000	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
556.6	15.28	216.87	551.4	-46.3	-34.7	3.50	3.50	0.00	216.872	
5,296.1	15.28	216.87	5,123.4	-1,045.5	-784.2	0.00	0.00	0.00	0.000	
6,314.7	0.00	0.00	6,130.0	-1,153.5	-865.2	1.50	-1.50	0.00	180.000	
6,414.7	0.00	0.00	6,230.0	-1,153.5	-865.2	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
8,814.7	0.00	0.00	8,630.0	-1,153.5	-865.2	0.00	0.00	0.00	0.000	

**Williams**  
Planning Report - Geographic

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Project:	RU 36-06S-094W	MD Reference:	KELLY BUSHING @ 6411.0usft (H&P 271 (24' RKB) kjs)
Site:	GV 15-36 Pad	North Reference:	True
Well:	RWF 512-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 01Mar11 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	1,610,106.90	2,339,631.10	39° 29' 6.608 N	107° 50' 23.888 W
120.0	0.00	0.00	120.0	0.0	0.0	1,610,106.90	2,339,631.10	39° 29' 6.608 N	107° 50' 23.888 W
Start Build 3.50									
556.6	15.28	216.87	551.4	-46.3	-34.7	1,610,061.51	2,339,595.20	39° 29' 6.150 N	107° 50' 24.331 W
Hold 15.28 Inclination									
1,125.3	15.28	216.87	1,100.0	-166.2	-124.7	1,609,943.88	2,339,502.22	39° 29' 4.965 N	107° 50' 25.478 W
9 5/8"									
2,431.4	15.28	216.87	2,360.0	-441.6	-331.2	1,609,674.03	2,339,288.65	39° 29' 2.244 N	107° 50' 28.112 W
Top of "G" Sand									
2,535.1	15.28	216.87	2,460.0	-463.4	-347.6	1,609,652.61	2,339,271.70	39° 29' 2.028 N	107° 50' 28.321 W
Base of "G" Sand									
5,054.2	15.28	216.87	4,890.0	-994.5	-745.9	1,609,131.89	2,338,859.83	39° 28' 56.779 N	107° 50' 33.401 W
Mesaverde									
5,296.1	15.28	216.87	5,123.4	-1,045.5	-784.2	1,609,081.99	2,338,820.28	39° 28' 56.275 N	107° 50' 33.889 W
Start Drop -1.50									
6,314.7	0.00	0.00	6,130.0	-1,153.5	-865.2	1,608,976.10	2,338,736.50	39° 28' 55.207 N	107° 50' 34.923 W
Vertical									
6,414.7	0.00	0.00	6,230.0	-1,153.5	-865.2	1,608,976.10	2,338,736.50	39° 28' 55.207 N	107° 50' 34.923 W
Top Gas - Approx. Top Gas									
7,819.7	0.00	0.00	7,635.0	-1,153.5	-865.2	1,608,976.10	2,338,736.50	39° 28' 55.207 N	107° 50' 34.923 W
Cameo									
8,549.7	0.00	0.00	8,365.0	-1,153.5	-865.2	1,608,976.10	2,338,736.50	39° 28' 55.207 N	107° 50' 34.923 W
Coal D									
8,579.7	0.00	0.00	8,395.0	-1,153.5	-865.2	1,608,976.10	2,338,736.50	39° 28' 55.207 N	107° 50' 34.923 W
Base L. Cameo Pay									
8,664.7	0.00	0.00	8,480.0	-1,153.5	-865.2	1,608,976.10	2,338,736.50	39° 28' 55.207 N	107° 50' 34.923 W
Rollins SS									
8,814.7	0.00	0.00	8,630.0	-1,153.5	-865.2	1,608,976.10	2,338,736.50	39° 28' 55.207 N	107° 50' 34.923 W
TD at 8814.7 - 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	6,230.0	-1,153.5	-865.2	1,608,976.10	2,338,736.50	39° 28' 55.207 N	107° 50' 34.923 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,125.3	1,100.0	9 5/8"	9.625	12.250	

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Planning Report - Geographic

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Project:	RU 36-06S-094W	MD Reference:	KELLY BUSHING @ 6411.0usft (H&P 271 (24' RKB) kjs)
Site:	GV 15-36 Pad	North Reference:	True
Well:	RWF 512-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 01Mar11 kjs		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")
2,431.4	2,360.0	Top of "G" Sand			
2,535.1	2,460.0	Base of "G" Sand			
5,054.2	4,890.0	Mesaverde			
6,414.7	6,230.0	Approx. Top Gas			
7,819.7	7,635.0	Cameo			
8,549.7	8,365.0	Coal D			
8,579.7	8,395.0	Base L. Cameo Pay			
8,664.7	8,480.0	Rollins SS			
8,814.7	8,630.0	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 3.50
556.6	551.4	-46.3	-34.7	Hold 15.28 Inclination
5,296.1	5,123.4	-1,045.5	-784.2	Start Drop -1.50
6,314.7	6,130.0	-1,153.5	-865.2	Vertical
6,414.7	6,230.0	-1,153.5	-865.2	Top Gas
8,814.7	8,630.0	-1,153.5	-865.2	TD at 8814.7