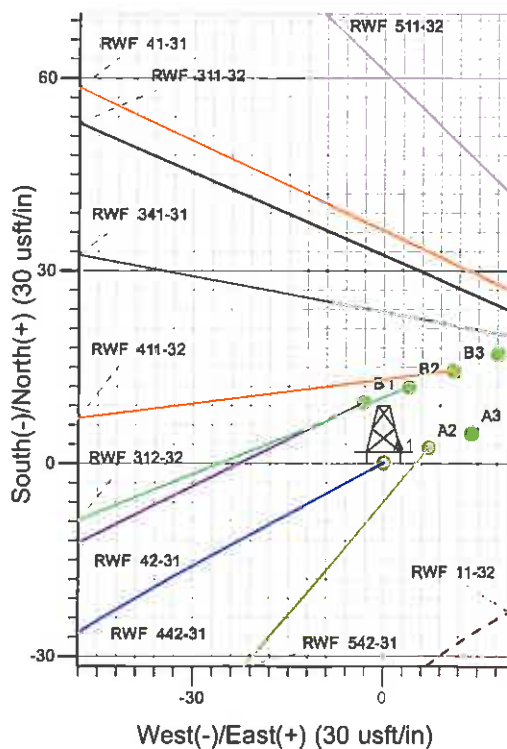
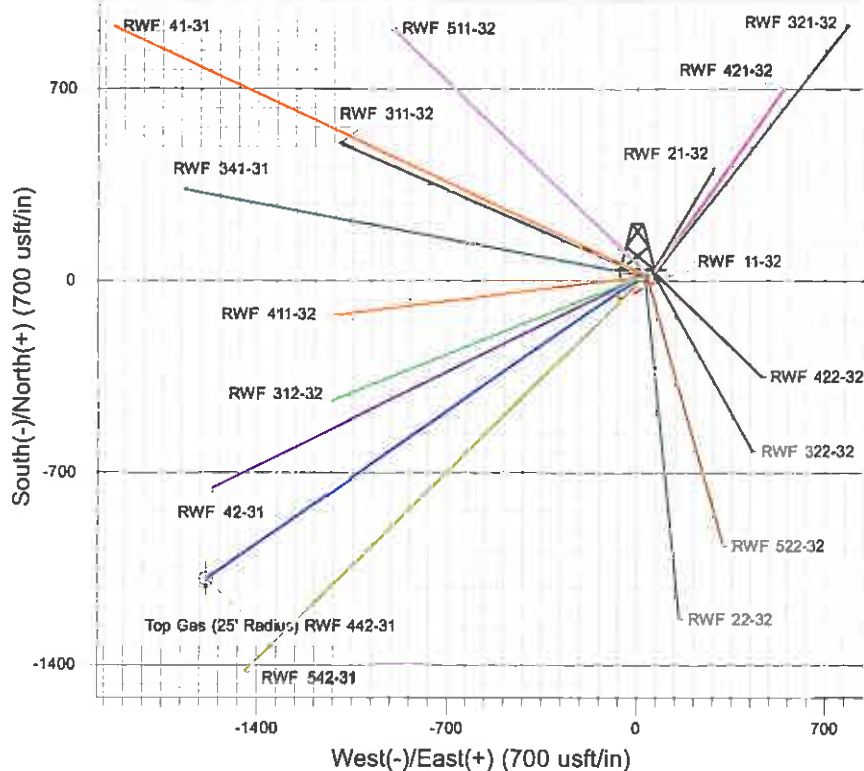
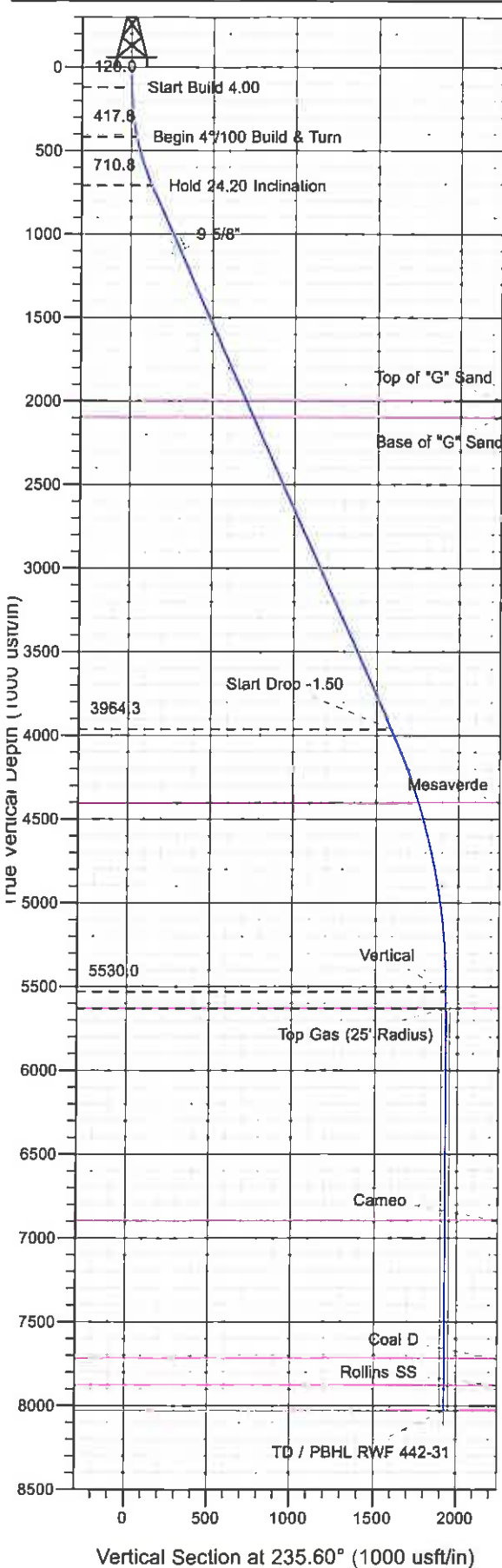




Surface Location: RWF 11-32 Pad
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
 Ground Elevation: 5539.0
 Northing Easting Latitude Longitude Slot
 1610848.10 2318200.50 39° 29' 8.387 N 107° 54' 57.388 W A1
 KELLY BUSHING @ 5565.0usft (SSD 573 (25' RKB) kjs)



Project: RU 32-06S-094W
 Site: RWF 11-32 Pad
 Well: RWF 442-31
 Design #1 08Jun11 kjs



Azimuths to True North
 Magnetic North: 10.32°
 Magnetic Field
 Strength: 52260.9nT
 Dip Angle: 65.75°
 Date: 6/6/2011
 Model: IGRF2010

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 4.00
417.8	420.0	12.00	242.00	-14.7	-27.6	31.1	31.3	Begin 47/100 Build & Turn
710.8	728.8	24.20	235.38	-65.9	-108.4	126.7	127.0	Hold 24.20 Inclination
3964.3	4295.7	24.20	235.38	-896.6	-1311.6	1588.7	1589.1	Start Drop -1.50
5530.0	5909.0	0.00	0.00	-1087.2	-1587.8	1924.4	1924.7	Vertical
5530.0	6009.0	0.00	0.00	-1087.2	-1587.8	1924.4	1924.7	Top Gas
8030.0	8409.0	0.00	0.00	-1087.2	-1587.8	1924.4	1924.7	TD at 8409.0

PICEANCE VLY NAD 83

RU 32-06S-094W

RWF 11-32 Pad

RWF 442-31 - Slot A1

Wellbore #1

Plan: Design #1 08Jun11 kjs

Standard Planning Report - Geographic

27 July, 2011

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 442-31 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5565.0usft (SSD 573 (25' RKB) kjs)
Project:	RU 32-06S-094W	MD Reference:	KELLY BUSHING @ 5565.0usft (SSD 573 (25' RKB) kjs)
Site:	RWF 11-32 Pad	North Reference:	True
Well:	RWF 442-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Jun11 kjs		

Project	RU 32-06S-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	RWF 11-32 Pad		
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Site Position:		Northing:	1,610,858.10 usft	Latitude:	39° 29' 8.495 N
From:	Map	Eastng:	2,318,234.00 usft	Longitude:	107° 54' 56.965 W
Position Uncertainty:	0.0 usft	Slot Radius:	13,200 in	Grid Convergence:	-1.524 °

Well	RWF 442-31 - Slot A1				
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Well Position	+N/-S	0.0 usft	Northing:	1,610,848.10 usft	Latitude:	39° 29' 8.387 N
	+E/-W	0.0 usft	Eastng:	2,318,200.50 usft	Longitude:	107° 54' 57.388 W
Position Uncertainty	0.0 usft		Wellhead Elevation:		Ground Level:	5,539.0 usft

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/6/2011	10.319	65.746	52,261

Design	Design #1 08Jun11 kjs				
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Audit Notes:

Version:	Phase:	PLAN	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	235.60

Plan Sections										
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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	
420.0	12.00	242.00	417.8	-14.7	-27.6	4.00	4.00	0.00	242.000	
728.8	24.20	235.38	710.8	-65.9	-108.4	4.00	3.95	-2.14	-12.761	
4,295.7	24.20	235.38	3,964.3	-896.6	-1,311.6	0.00	0.00	0.00	0.000	
5,909.0	0.00	0.00	5,530.0	-1,087.2	-1,587.8	1.50	-1.50	0.00	180.000	
8,409.0	0.00	0.00	8,030.0	-1,087.2	-1,587.8	0.00	0.00	0.00	0.000	TD / PBHL RWF 442-

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 442-31 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5565.0usft (SSD 573 (25' RKB) kjs)
Project:	RU 32-06S-094W	MD Reference:	KELLY BUSHING @ 5565.0usft (SSD 573 (25' RKB) kjs)
Site:	RWF 11-32 Pad	North Reference:	True
Well:	RWF 442-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Jun11 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	1,610,848.10	2,318,200.50	39° 29' 8.387 N	107° 54' 57.388 W
120.0	0.00	0.00	120.0	0.0	0.0	1,610,848.10	2,318,200.50	39° 29' 8.387 N	107° 54' 57.388 W
Start Build 4.00									
420.0	12.00	242.00	417.8	-14.7	-27.6	1,610,834.14	2,318,172.48	39° 29' 8.242 N	107° 54' 57.741 W
Begin 4°/100 Build & Turn									
728.8	24.20	235.38	710.8	-65.9	-108.4	1,610,785.08	2,318,090.41	39° 29' 7.736 N	107° 54' 58.771 W
Hold 24.20 Inclination									
1,155.5	24.20	235.38	1,100.0	-165.3	-252.3	1,610,689.58	2,317,943.89	39° 29' 6.754 N	107° 55' 0.606 W
9 5/8"									
2,136.7	24.20	235.38	1,995.0	-393.8	-583.3	1,610,469.97	2,317,606.95	39° 29' 4.496 N	107° 55' 4.828 W
Top of "G" Sand									
2,246.3	24.20	235.38	2,095.0	-419.3	-620.3	1,610,445.44	2,317,569.31	39° 29' 4.243 N	107° 55' 5.300 W
Base of "G" Sand									
4,295.7	24.20	235.38	3,964.3	-896.6	-1,311.6	1,609,986.76	2,316,865.58	39° 28' 59.526 N	107° 55' 14.117 W
Start Drop -1.50									
4,767.0	17.13	235.38	4,405.0	-991.0	-1,448.4	1,609,896.01	2,316,726.34	39° 28' 58.593 N	107° 55' 15.861 W
Mesaverde									
5,909.0	0.00	0.00	5,530.0	-1,087.2	-1,587.8	1,609,803.50	2,316,584.40	39° 28' 57.641 N	107° 55' 17.639 W
Vertical									
6,009.0	0.00	0.00	5,630.0	-1,087.2	-1,587.8	1,609,803.50	2,316,584.40	39° 28' 57.641 N	107° 55' 17.639 W
Top Gas - Approx. Top Gas - Top Gas (25' Radius) RWF 442-31									
7,274.0	0.00	0.00	6,895.0	-1,087.2	-1,587.8	1,609,803.50	2,316,584.40	39° 28' 57.641 N	107° 55' 17.639 W
Cameo									
8,099.0	0.00	0.00	7,720.0	-1,087.2	-1,587.8	1,609,803.50	2,316,584.40	39° 28' 57.641 N	107° 55' 17.639 W
Coal D									
8,259.0	0.00	0.00	7,880.0	-1,087.2	-1,587.8	1,609,803.50	2,316,584.40	39° 28' 57.641 N	107° 55' 17.639 W
Rollins SS									
8,409.0	0.00	0.00	8,030.0	-1,087.2	-1,587.8	1,609,803.50	2,316,584.40	39° 28' 57.641 N	107° 55' 17.639 W
TD at 8409.0 - TD - TD / PBHL RWF 442-31									

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	5,630.0	-1,087.2	-1,587.8	1,609,803.50	2,316,584.40	39° 28' 57.641 N	107° 55' 17.639 W
- plan hits target center									
- Circle (radius 25.0)									
TD / PBHL RWF 442-31	0.00	0.00	8,030.0	-1,087.2	-1,587.8	1,609,803.50	2,316,584.40	39° 28' 57.641 N	107° 55' 17.639 W
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,155.5	1,100.0	9 5/8"	9.625	12.250

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 442-31 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5565.0usft (SSD 573 (25' RKB) kjs)
Project:	RU 32-06S-094W	MD Reference:	KELLY BUSHING @ 5565.0usft (SSD 573 (25' RKB) kjs)
Site:	RWF 11-32 Pad	North Reference:	True
Well:	RWF 442-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Jun11 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,136.7	1,995.0	Top of "G" Sand				
2,246.3	2,095.0	Base of "G" Sand				
4,767.0	4,405.0	Mesaverde				
6,009.0	5,630.0	Approx. Top Gas				
7,274.0	6,895.0	Cameo				
8,099.0	7,720.0	Coal D				
8,259.0	7,880.0	Rollins SS				
8,409.0	8,030.0	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 4.00	
420.0	417.8	-14.7	-27.6	Begin 4°/100 Build & Turn	
728.8	710.8	-65.9	-108.4	Hold 24.20 Inclination	
4,295.7	3,964.3	-896.6	-1,311.6	Start Drop -1.50	
5,909.0	5,530.0	-1,087.2	-1,587.8	Vertical	
6,009.0	5,630.0	-1,087.2	-1,587.8	Top Gas	
8,409.0	8,030.0	-1,087.2	-1,587.8	TD at 8409.0	