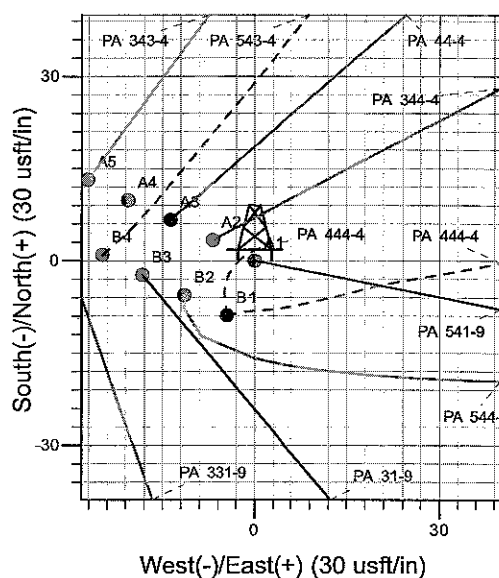
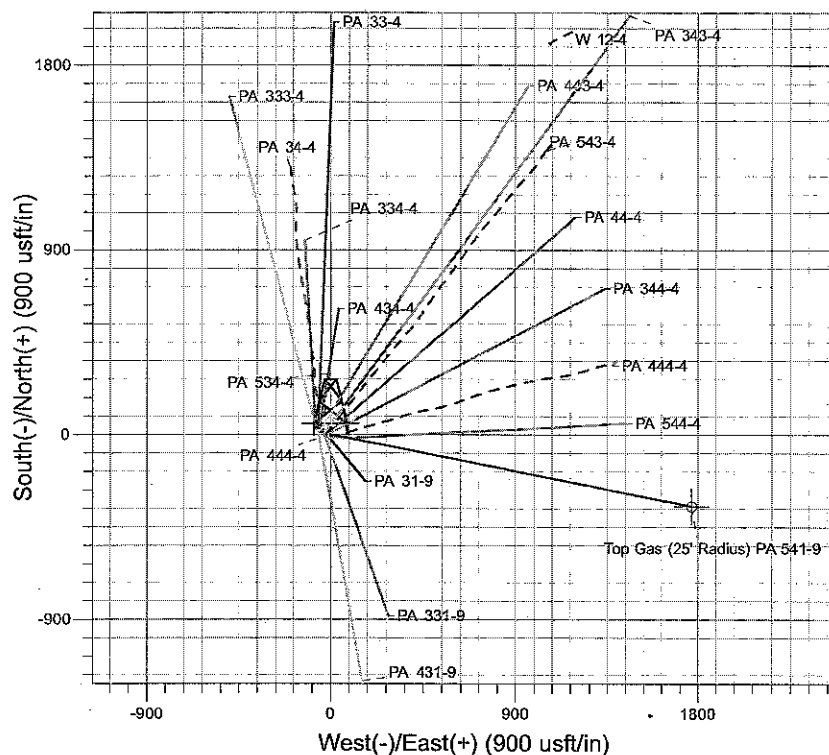
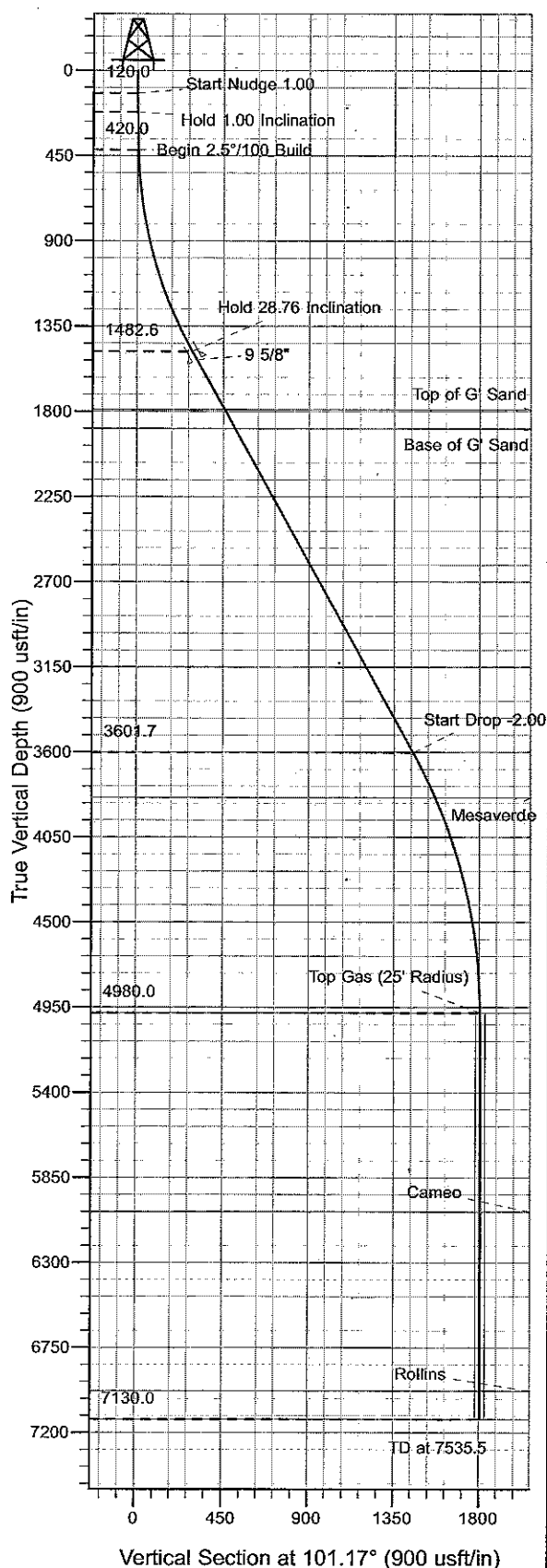




Well Name: PA 541-9  
 Surface Location: PA 34-4 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5757.0  
 +N/-S 0.0 +E/-W 0.0 Northing 1602010.76 Easting 2294079.58 Latitude 39° 27' 34.624 N Longitude 108° 0' 1.832 W Slot A1  
 KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)



Project: PA 04-07S-095W  
 Site: PA 34-4 Pad  
 Well: PA 541-9  
 PA 541-9 plan #1 11Mar10 sam

Azimuths to True North  
 Magnetic North: 10.49°  
 Magnetic Field  
 Strength: 52387.6snT  
 Dip Angle: 65.75°  
 Date: 3/11/2010  
 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 Nudge 1.00
220.0	220.0	1.00	101.17	-0.2	0.9	0.9	0.9	Hold 1.00 Inclination
420.0	420.0	1.00	101.17	-0.8	4.3	4.4	4.4	Begin 2.5°/100 Build
1482.6	1530.3	28.76	101.17	-55.5	281.3	286.7	286.7	Hold 28.76 Inclination
3601.7	3947.6	28.76	101.17	-280.9	1422.2	1449.7	1449.7	Start Drop -2.00
4980.0	5385.5	0.00	0.00	-349.3	1768.9	1803.0	1803.0	Top Gas
7130.0	7535.5	0.00	0.00	-349.3	1768.9	1803.0	1803.0	TD at 7535.5

# **PICEANCE VLY NAD 83**

**PA 04-07S-095W**

**PA 34-4 Pad**

**PA 541-9 - Slot A1**

**Wellbore #1**

**Plan: PA 541-9 plan #1 11Mar10 sam**

## **Standard Planning Report - Geographic**

**25 May, 2010**

# Williams

## Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN.AUTH	<b>Local Co-ordinate Reference:</b>	Well PA 541-9 - Slot A1
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
<b>Project:</b>	PA 04-07S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
<b>Site:</b>	PA 34-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 541-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PA 541-9 plan #1 11Mar10 sam		

<b>Project</b>	PA 04-07S-095W, Garfield County, CO, 04-07S-095W		
<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>	PA 34-4 Pad		
<b>Site Position:</b>		<b>Northing:</b>	1,602,022.90 usft
<b>From:</b>	Map	<b>Easting:</b>	2,294,034.80 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	39° 27' 34.732 N
		<b>Longitude:</b>	108° 0' 2.407 W
		<b>Grid Convergence:</b>	-1.577 °

<b>Well</b>	PA 541-9 - Slot A1		
<b>Well Position</b>	+N/-S	0.0 usft	<b>Northing:</b> 1,602,010.76 usft
	+E/-W	0.0 usft	<b>Easting:</b> 2,294,079.58 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 39° 27' 34.624 N
			<b>Longitude:</b> 108° 0' 1.832 W
			<b>Ground Level:</b> 5,757.0 usft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>
	IGRF2005-10	3/11/2010	(°)
			10.490
			<b>Dip Angle</b>
			(°)
			65.754
			<b>Field Strength</b>
			(nT)
			52,388

<b>Design</b>	PA 541-9 plan #1 11Mar10 sam		
<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</b>	<b>+E/-W</b>
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			<b>Direction</b>
			(°)
			101.17

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	
220.0	1.00	101.17	220.0	-0.2	0.9	1.00	1.00	0.00	101.170	
420.0	1.00	101.17	420.0	-0.8	4.3	0.00	0.00	0.00	0.000	
1,530.3	28.76	101.17	1,482.6	-55.5	281.3	2.50	2.50	0.00	0.002	
3,947.6	28.76	101.17	3,601.7	-280.9	1,422.2	0.00	0.00	0.00	0.000	
5,385.5	0.00	0.00	4,980.0	-349.3	1,768.9	2.00	-2.00	0.00	180.000	Top Gas (25' Radius)
7,535.5	0.00	0.00	7,130.0	-349.3	1,768.9	0.00	0.00	0.00	0.000	

# Williams

## Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well PA 541-9 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
Project:	PA 04-07S-095W	MD Reference:	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
Site:	PA 34-4 Pad	North Reference:	True
Well:	PA 541-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PA 541-9 plan #1 11Mar10 sam		

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	1,602,010.76	2,294,079.58	39° 27' 34.624 N	108° 0' 1.832 W
120.0	0.00	0.00	120.0	0.0	0.0	1,602,010.76	2,294,079.58	39° 27' 34.624 N	108° 0' 1.832 W
Start Nudge 1.00									
220.0	1.00	101.17	220.0	-0.2	0.9	1,602,010.57	2,294,080.43	39° 27' 34.622 N	108° 0' 1.821 W
Hold 1.00 Inclination									
420.0	1.00	101.17	420.0	-0.8	4.3	1,602,009.80	2,294,083.84	39° 27' 34.616 N	108° 0' 1.778 W
Begin 2.5°/100 Build									
1,530.3	28.76	101.17	1,482.6	-55.5	281.3	1,601,947.49	2,294,359.21	39° 27' 34.075 N	107° 59' 58.246 W
Hold 28.76 Inclination									
1,580.0	28.76	101.17	1,526.1	-60.2	304.7	1,601,942.22	2,294,382.50	39° 27' 34.029 N	107° 59' 57.947 W
9 5/8"									
1,881.0	28.76	101.17	1,790.0	-88.2	446.8	1,601,910.27	2,294,523.74	39° 27' 33.752 N	107° 59' 56.136 W
Top of G' Sand									
1,995.1	28.76	101.17	1,890.0	-98.9	500.6	1,601,898.16	2,294,577.26	39° 27' 33.647 N	107° 59' 55.450 W
Base of G' Sand									
3,947.6	28.76	101.17	3,601.7	-280.9	1,422.2	1,601,690.87	2,295,493.47	39° 27' 31.848 N	107° 59' 43.700 W
Start Drop -2.00									
4,213.1	23.45	101.17	3,840.0	-303.5	1,536.8	1,601,665.10	2,295,607.35	39° 27' 31.624 N	107° 59' 42.239 W
Mesaverde									
5,385.5	0.00	0.00	4,980.0	-349.3	1,768.9	1,601,612.90	2,295,838.10	39° 27' 31.171 N	107° 59' 39.280 W
Top Gas - Top Gas									
6,435.5	0.00	0.00	6,030.0	-349.3	1,768.9	1,601,612.90	2,295,838.10	39° 27' 31.171 N	107° 59' 39.280 W
Cameo									
7,385.5	0.00	0.00	6,980.0	-349.3	1,768.9	1,601,612.90	2,295,838.10	39° 27' 31.171 N	107° 59' 39.280 W
Rollins									
7,535.5	0.00	0.00	7,130.0	-349.3	1,768.9	1,601,612.90	2,295,838.10	39° 27' 31.171 N	107° 59' 39.280 W
TD at 7535.5 - 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) P/	0.00	0.00	4,980.0	-349.3	1,768.9	1,601,612.90	2,295,838.10	39° 27' 31.171 N	107° 59' 39.280 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,580.0	1,526.1	9 5/8"	9.625	12.250	

# Planning Map Geographic

**Database:** Compass R5000 WIN AUTH  
**Company:** PICEANCE VLY NAD 83  
**Project:** PA 04-07S-095W  
**Site:** PA 34-4 Pad  
**Well:** PA 541-9  
**Wellbore:** Wellbore #1  
**Design:** PA 541-9 plan #1 11Mar10 sam

**Coordinate Reference:** Well PA 541-9 - Slot A1  
**Location:** KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)  
**Location:** KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)  
**Reference:** True  
**Calculation Method:** Minimum Curvature

Formations			
Measured Depth (usft)	Vertical Depth (usft)	Name	Dip Direction (°)
1,881.0	1,790.0	Top of G' Sand	0.000
1,995.1	1,890.0	Base of G' Sand	0.000
4,213.1	3,840.0	Mesaverde	0.000
5,385.5	4,980.0	Top Gas	0.000
6,435.5	6,030.0	Cameo	0.000
7,385.5	6,980.0	Rollins	0.000
7,535.5	7,130.0	TD	0.000

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 Nudge 1.00
220.0	220.0	-0.2	0.0	Hold 1.00 Inclination
420.0	420.0	-0.8	0.0	Begin 2.5°/100 Build
1,530.3	1,482.6	-55.5	28.0	Hold 28.76 Inclination
3,947.6	3,601.7	-280.9	1,122.2	Start Drop -2.00
5,385.5	4,980.0	-349.3	1,000.0	Top Gas
7,535.5	7,130.0	-349.3	1,000.0	TD at 7535.5