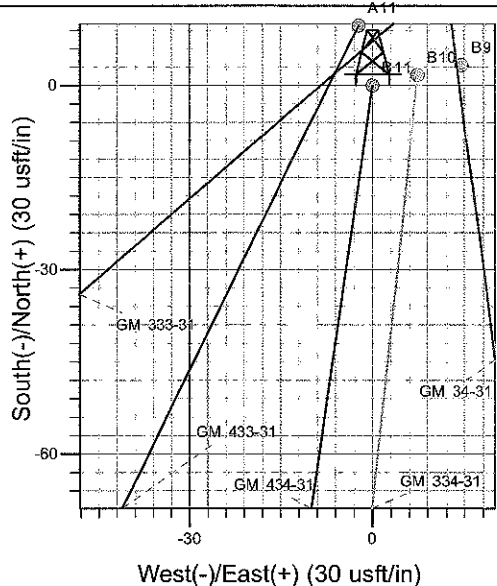
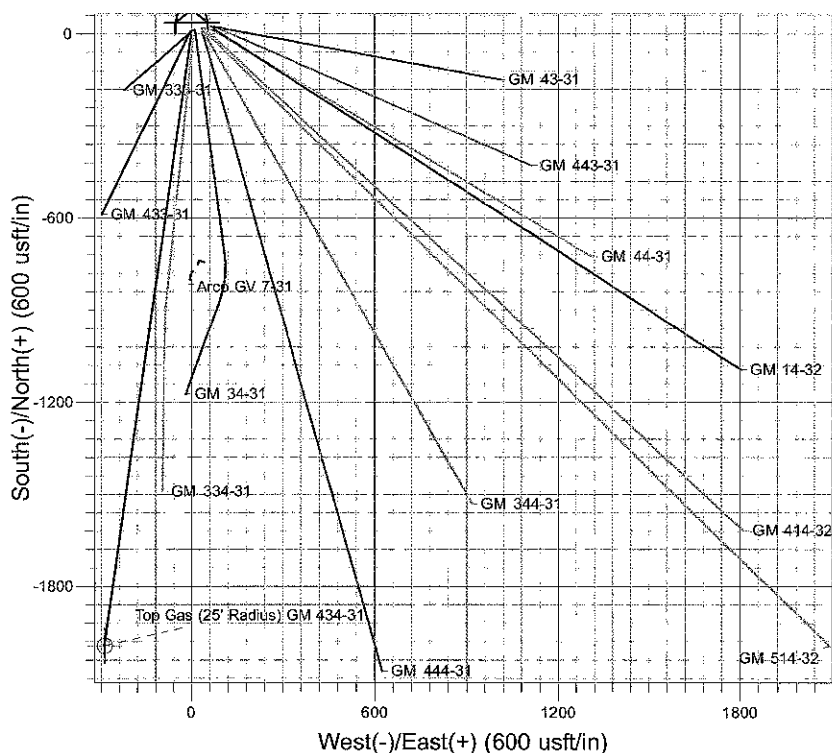
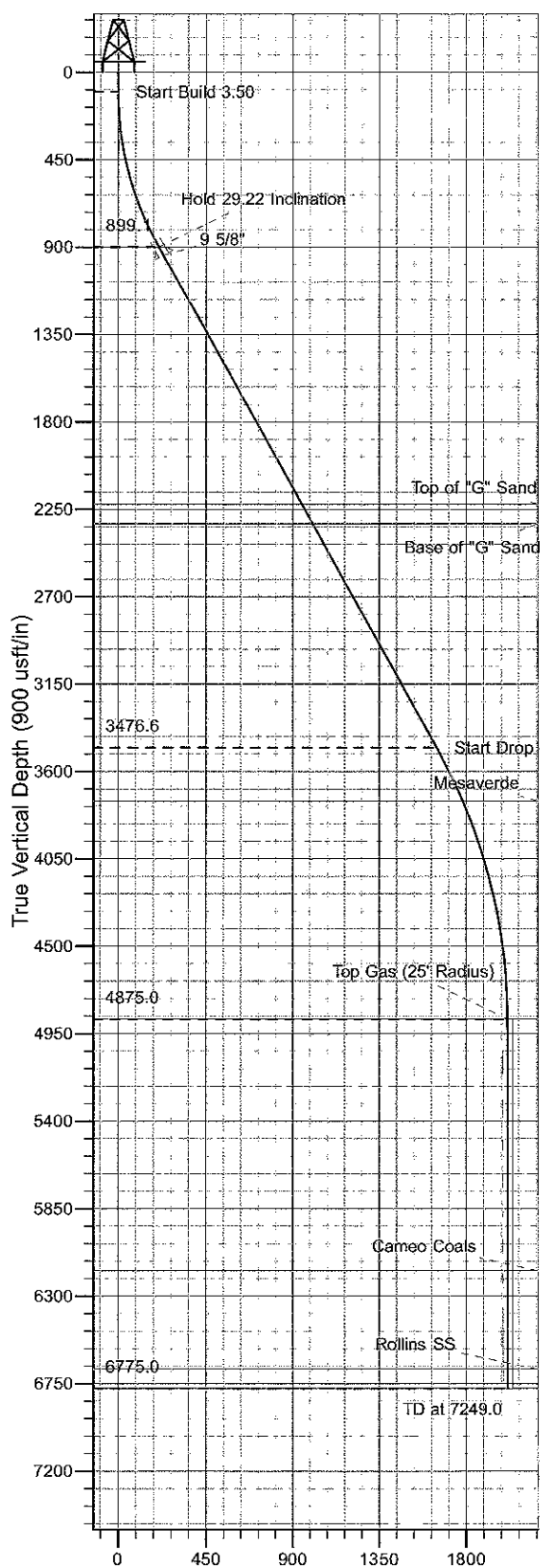




Well Name: GM 434-31
 Surface Location: GM 333-31 Pad
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
 Ground Elevation: 6100.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1610342.70 2252762.60 39° 28' 45.372 N 108° 8' 51.508 W B11
 KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)



Project: GV 31-06S-096W
 Site: GM 333-31 Pad
 Well: GM 434-31
 Plan #2 14Jul09 kjs

↑ M Azimuths to True North
 Magnetic North: 10.93°
 Magnetic Field
 Strength: 52652.8snT
 Dip Angle: 65.81°
 Date: 5/7/2007
 Model: IGRF2005-10

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
100.0	100.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.50
899.1	934.8	29.22	188.23	-206.1	-29.8	208.3	208.3	Hold 29.22 Inclination
3476.6	3888.1	29.22	188.23	-1632.9	-236.1	1649.9	1649.9	Start Drop -200
4875.0	5349.0	0.00	0.00	-1993.6	-288.2	2014.4	2014.4	Top Gas
6775.0	7249.0	0.00	0.00	-1993.6	-288.2	2014.4	2014.4	TD at 7249.0

PICEANCE VLY NAD 83

GV 31-06S-096W

GM 333-31 Pad

GM 434-31 - Slot B11

GM 434-31

Plan: Plan #2 14Jul09 kjs

Standard Planning Report - Geographic

09 March, 2010

Williams

Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 434-31 - Slot B11
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6124.0usft (H&P 280 (24") kjs)
Project:	GV 31-06S-096W	MD Reference:	KELLY BUSHING @ 6124.0usft (H&P 280 (24") kjs)
Site:	GM 333-31 Pad	North Reference:	True
Well:	GM 434-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	GM 434-31		
Design:	Plan #2 14Jul09 kjs		

Project	GV 31-06S-096W, Garfield County, CO, 31-06S-096W		
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	GM 333-31 Pad			
Site Position:		Northing:	1,610,367.10 usft	Latitude: 39° 28' 45.634 N
From:	Map	Easting:	2,252,834.10 usft	Longitude: 108° 8' 50.606 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence: -1.670 °

Well	GM 434-31 - Slot B11			
Well Position	+N/-S	0.0 usft	Northing:	1,610,342.70 usft
	+E/-W	0.0 usft	Easting:	2,252,762.60 usft
Position Uncertainty	0.0 usft		Wellhead Elevation:	Ground Level: 6,100.0 usft

Wellbore	GM 434-31				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	5/7/2007	10.929	65.814	52,653

Design	Plan #2 14Jul09 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	188.23

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	
100.0	0.00	0.00	100.0	0.0	0.0	0.00	0.00	0.00	0.000	
934.8	29.22	188.23	899.1	-206.1	-29.8	3.50	3.50	0.00	188.227	
3,888.1	29.22	188.23	3,476.6	-1,632.9	-236.1	0.00	0.00	0.00	0.000	
5,349.0	0.00	0.00	4,875.0	-1,993.6	-288.2	2.00	-2.00	0.00	180.000	Top Gas (25' Radius)
7,249.0	0.00	0.00	6,775.0	-1,993.6	-288.2	0.00	0.00	0.00	0.000	

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Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 434-31 - Slot B11
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)
Project:	GV 31-06S-096W	MD Reference:	KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)
Site:	GM 333-31 Pad	North Reference:	True
Well:	GM 434-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	GM 434-31		
Design:	Plan #2 14Jul09 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	1,610,342.70	2,252,762.60	39° 28' 45.372 N	108° 8' 51.508 W
100.0	0.00	0.00	100.0	0.0	0.0	1,610,342.70	2,252,762.60	39° 28' 45.372 N	108° 8' 51.508 W
Start Build 3.50									
934.8	29.22	188.23	899.1	-206.1	-29.8	1,610,137.52	2,252,726.80	39° 28' 43.335 N	108° 8' 51.888 W
Hold 29.22 Inclination									
985.0	29.22	188.23	942.9	-230.4	-33.3	1,610,113.39	2,252,722.59	39° 28' 43.095 N	108° 8' 51.933 W
9 5/8"									
2,452.9	29.22	188.23	2,224.0	-939.5	-135.8	1,609,407.56	2,252,599.45	39° 28' 36.086 N	108° 8' 53.241 W
Top of "G" Sand									
2,567.4	29.22	188.23	2,324.0	-994.9	-143.8	1,609,352.47	2,252,589.84	39° 28' 35.539 N	108° 8' 53.343 W
Base of "G" Sand									
3,888.1	29.22	188.23	3,476.6	-1,632.9	-236.1	1,608,717.45	2,252,479.04	39° 28' 29.234 N	108° 8' 54.519 W
Start Drop -2.00									
4,197.2	23.04	188.23	3,754.0	-1,767.5	-255.6	1,608,583.42	2,252,455.66	39° 28' 27.903 N	108° 8' 54.767 W
Mesaverde									
5,349.0	0.00	0.00	4,875.0	-1,993.6	-288.2	1,608,358.40	2,252,416.40	39° 28' 25.668 N	108° 8' 55.184 W
Top Gas - Approx. Top Gas									
6,644.0	0.00	0.00	6,170.0	-1,993.6	-288.2	1,608,358.40	2,252,416.40	39° 28' 25.668 N	108° 8' 55.184 W
Cameo Coals									
7,149.0	0.00	0.00	6,675.0	-1,993.6	-288.2	1,608,358.40	2,252,416.40	39° 28' 25.668 N	108° 8' 55.184 W
Rollins SS									
7,249.0	0.00	0.00	6,775.0	-1,993.6	-288.2	1,608,358.40	2,252,416.40	39° 28' 25.668 N	108° 8' 55.184 W
TD at 7249.0 - 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) GI	0.00	0.00	4,875.0	-1,993.6	-288.2	1,608,358.40	2,252,416.40	39° 28' 25.668 N	108° 8' 55.184 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
985.0	942.9	9 5/8"	9.625	12.250	

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Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 434-31 - Slot B11
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)
Project:	GV 31-06S-096W	MD Reference:	KELLY BUSHING @ 6124.0usft (H&P 280 (24') kjs)
Site:	GM 333-31 Pad	North Reference:	True
Well:	GM 434-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	GM 434-31		
Design:	Plan #2 14Jul09 kjs		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,452.9	2,224.0	Top of "G" Sand			
2,567.4	2,324.0	Base of "G" Sand			
4,197.2	3,754.0	Mesaverde			
5,349.0	4,875.0	Approx. Top Gas			
6,644.0	6,170.0	Cameo Coals			
7,149.0	6,675.0	Rollins SS			
7,249.0	6,775.0	TD			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.0	100.0	0.0	0.0	Start Build 3.50
934.8	899.1	-206.1	-29.8	Hold 29.22 Inclination
3,888.1	3,476.6	-1,632.9	-236.1	Start Drop -2.00
5,349.0	4,875.0	-1,993.6	-288.2	Top Gas
7,249.0	6,775.0	-1,993.6	-288.2	TD at 7249.0