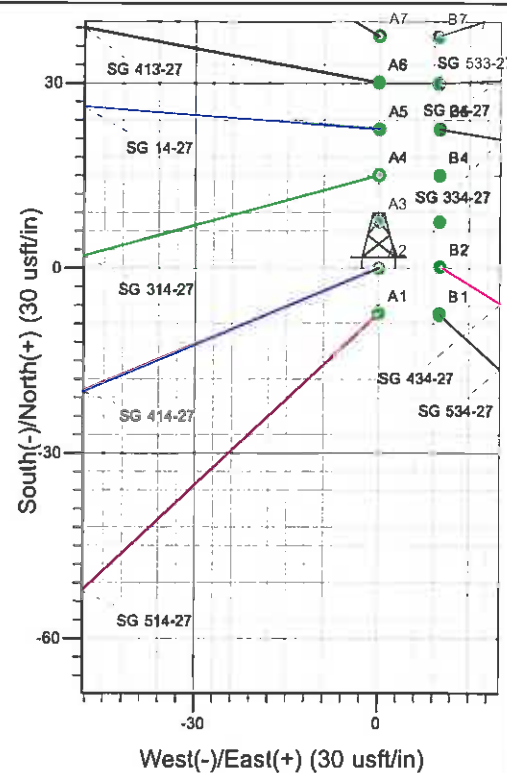
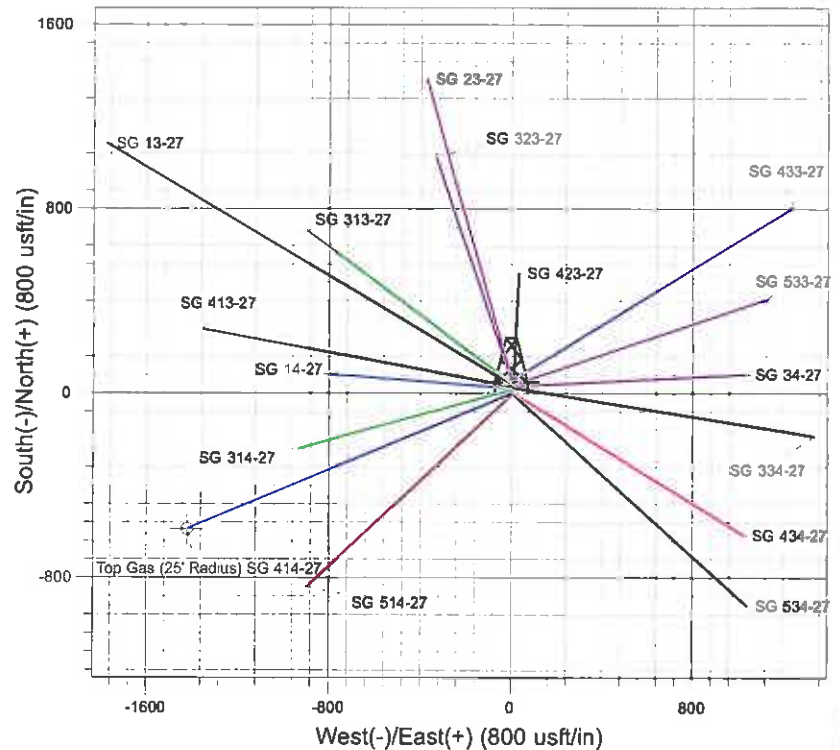
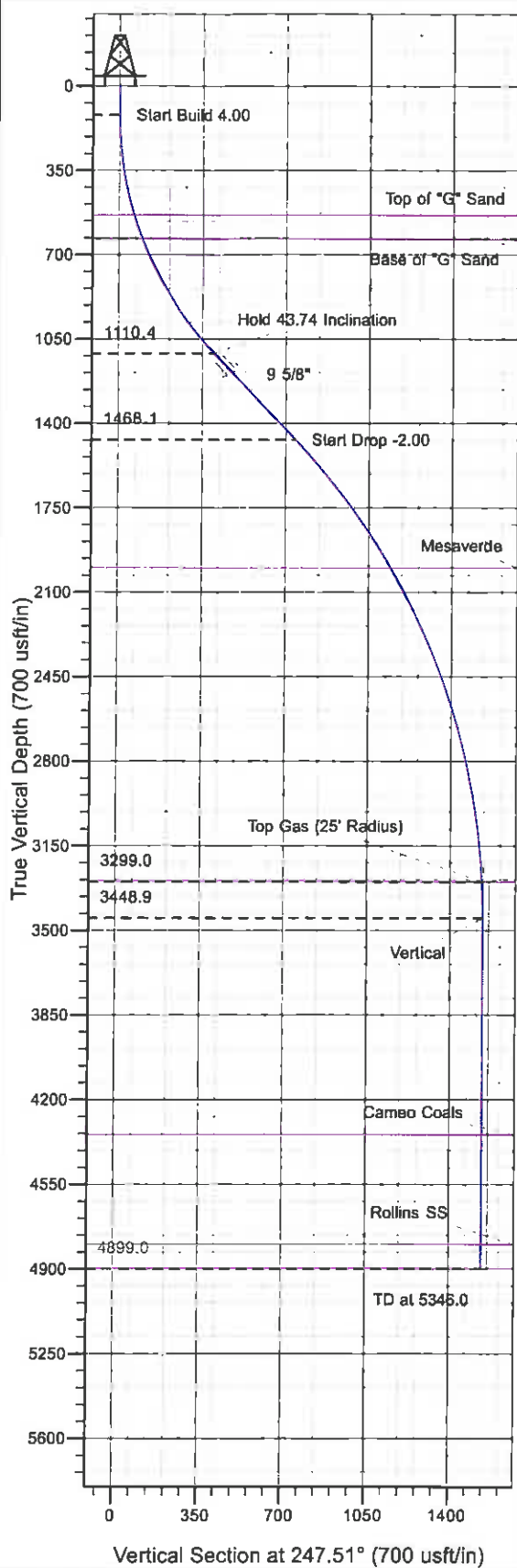




Well Name: SG 414-27
 Surface Location: SG 24-27 Pad
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
 Ground Elevation: 5012.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1582655.10	2265822.20	39° 24' 15.555 N	108° 5' 54.917 W	A2

KELLY BUSHING @ 5036.0usft (H&P 280 (24' RKB) kjs)



Project: SG 27-07S-096W
 Site: SG 24-27 Pad
 Well: SG 414-27
 Plan #2 29Apr11 kjs

Azimuths to True North
 Magnetic North: 10.51°

Magnetic Field
 Strength: 52338 3nT
 Dip Angle: 65.69°
 Date: 4/26/2010
 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 Build 4.00
1110.4	1213.6	43.74	247.51	-152.1	-367.3	397.6	397.6	Hold 43.74 Inclination
1468.1	1708.8	43.74	247.51	-283.0	-683.7	740.0	740.0	Start Drop -2.00
3299.0	3745.9	3.00	247.51	-585.7	-1414.7	1531.2	1531.2	Top Gas
3448.9	3895.9	0.00	0.00	-587.2	-1418.3	1535.1	1535.1	Vertical
4899.0	5346.0	0.00	0.00	-587.2	-1418.3	1535.1	1535.1	TD at 5346.0

PICEANCE VLY NAD 83

SG 27-07S-096W

SG 24-27 Pad

SG 414-27 - Slot A2

Wellbore #1

Plan: Plan #2 29Apr11 kjs

Standard Planning Report - Geographic

05 July, 2011

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well SG 414-27 - Slot A2
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5036.0usft (H&P 280 (24' RKB) kjs)
Project:	SG 27-07S-096W	MD Reference:	KELLY BUSHING @ 5036.0usft (H&P 280 (24' RKB) kjs)
Site:	SG 24-27 Pad	North Reference:	True
Well:	SG 414-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 29Apr11 kjs		

Project	SG 27-07S-096W, Garfield County, CO, 27-07S-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	SG 24-27 Pad		
Site Position:		Northing:	1,582,647.63 usft
From:	Map	Easting:	2,265,822.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in
		Latitude:	39° 24' 15.481 N
		Longitude:	108° 5' 54.917 W
		Grid Convergence:	-1.639 °

Well	SG 414-27 - Slot A2		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	5,012.0 usft
		Latitude:	39° 24' 15.555 N
		Longitude:	108° 5' 54.917 W
		Ground Level:	

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2005-10	4/26/2010	10.510
			Dip Angle (°)
			65.686
			Field Strength (nT)
			52,338

Design	Plan #2 29Apr11 kjs		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			247.51

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	
1,213.6	43.74	247.51	1,110.4	-152.1	-367.3	4.00	4.00	0.00	247.510	
1,708.8	43.74	247.51	1,468.1	-283.0	-683.7	0.00	0.00	0.00	0.000	
3,745.9	3.00	247.51	3,299.0	-585.7	-1,414.7	2.00	-2.00	0.00	180.000	Top Gas (25' Radius)
3,895.9	0.00	0.00	3,448.9	-587.2	-1,418.3	2.00	-2.00	74.99	180.000	
5,346.0	0.00	0.00	4,899.0	-587.2	-1,418.3	0.00	0.00	0.00	0.000	

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well SG 414-27 - Slot A2
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5036.0usft (H&P 280 (24' RKB) kjs)
Project:	SG 27-07S-096W	MD Reference:	KELLY BUSHING @ 5036.0usft (H&P 280 (24' RKB) kjs)
Site:	SG 24-27 Pad	North Reference:	True
Well:	SG 414-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 29Apr11 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	1,582,655.10	2,265,822.20	39° 24' 15.555 N	108° 5' 54.917 W
120.0	0.00	0.00	120.0	0.0	0.0	1,582,655.10	2,265,822.20	39° 24' 15.555 N	108° 5' 54.917 W
Start Build 4.00									
541.0	16.84	247.51	535.0	-23.5	-56.8	1,582,633.23	2,265,764.79	39° 24' 15.323 N	108° 5' 55.640 W
Top of "G" Sand									
646.8	21.07	247.51	635.0	-36.6	-88.5	1,582,621.00	2,265,732.69	39° 24' 15.193 N	108° 5' 56.044 W
Base of "G" Sand									
1,213.6	43.74	247.51	1,110.4	-152.1	-367.3	1,582,513.59	2,265,450.69	39° 24' 14.052 N	108° 5' 59.596 W
Hold 43.74 Inclination									
1,314.0	43.74	247.51	1,182.9	-178.6	-431.5	1,582,488.88	2,265,385.81	39° 24' 13.789 N	108° 6' 0.414 W
9 5/8"									
1,708.8	43.74	247.51	1,468.1	-283.0	-683.7	1,582,391.73	2,265,130.74	39° 24' 12.757 N	108° 6' 3.626 W
Start Drop -2.00									
2,375.6	30.41	247.51	1,999.0	-436.5	-1,054.3	1,582,248.97	2,264,755.92	39° 24' 11.241 N	108° 6' 8.348 W
Mesaverde									
3,745.9	3.00	247.51	3,299.0	-585.7	-1,414.7	1,582,110.12	2,264,391.40	39° 24' 9.766 N	108° 6' 12.939 W
Top Gas - Approx. Top Gas									
3,746.1	3.00	247.51	3,299.2	-585.7	-1,414.7	1,582,110.12	2,264,391.39	39° 24' 9.766 N	108° 6' 12.939 W
Top Gas (25' Radius) SG 414-27									
3,895.9	0.00	0.00	3,448.9	-587.2	-1,418.3	1,582,108.73	2,264,387.73	39° 24' 9.751 N	108° 6' 12.985 W
Vertical									
4,792.0	0.00	0.00	4,345.0	-587.2	-1,418.3	1,582,108.73	2,264,387.73	39° 24' 9.751 N	108° 6' 12.985 W
Cameo Coals									
5,246.0	0.00	0.00	4,799.0	-587.2	-1,418.3	1,582,108.73	2,264,387.73	39° 24' 9.751 N	108° 6' 12.985 W
Rollins SS									
5,346.0	0.00	0.00	4,899.0	-587.2	-1,418.3	1,582,108.73	2,264,387.73	39° 24' 9.751 N	108° 6' 12.985 W
TD at 5346.0 - 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) SC	0.00	0.00	3,299.0	-588.4	-1,420.9	1,582,107.60	2,264,385.10	39° 24' 9.739 N	108° 6' 13.018 W
- plan misses target center by 6.8usft at 3746.1usft MD (3299.2 TVD, -585.7 N, -1414.7 E)									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,314.0	1,182.9	9 5/8"	9.625	12.250	

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well SG 414-27 - Slot A2
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Project:	SG 27-07S-096W	MD Reference:	KELLY BUSHING @ 5036.0usft (H&P 280 (24' RKB) kjs)
Site:	SG 24-27 Pad	North Reference:	True
Well:	SG 414-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 29Apr11 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
541.0	535.0	Top of "G" Sand				
646.8	635.0	Base of "G" Sand				
2,375.6	1,989.0	Mesaverde				
3,745.9	3,299.0	Approx. Top Gas				
4,792.0	4,345.0	Cameo Coals				
5,246.0	4,799.0	Rollins SS				
5,346.0	4,899.0	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 4.00
1,213.6	1,110.4	-152.1	-367.3	Hold 43.74 Inclination
1,708.8	1,468.1	-283.0	-683.7	Start Drop -2.00
3,745.9	3,299.0	-585.7	-1,414.7	Top Gas
3,895.9	3,448.9	-587.2	-1,418.3	Vertical
5,346.0	4,899.0	-587.2	-1,418.3	TD at 5346.0