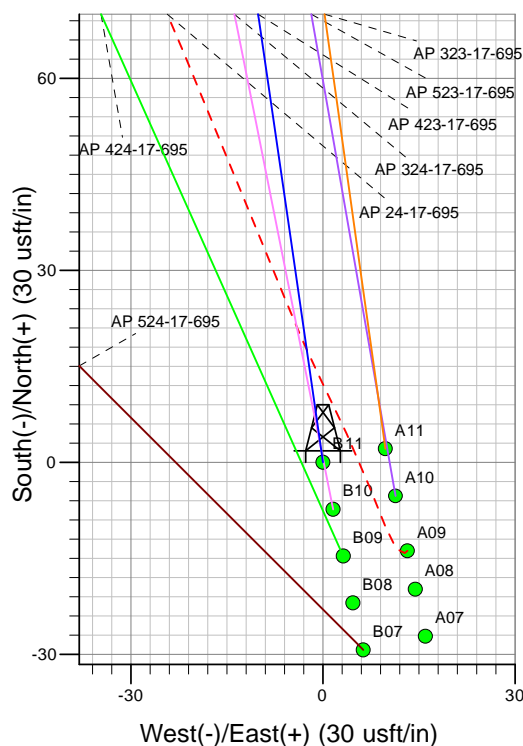
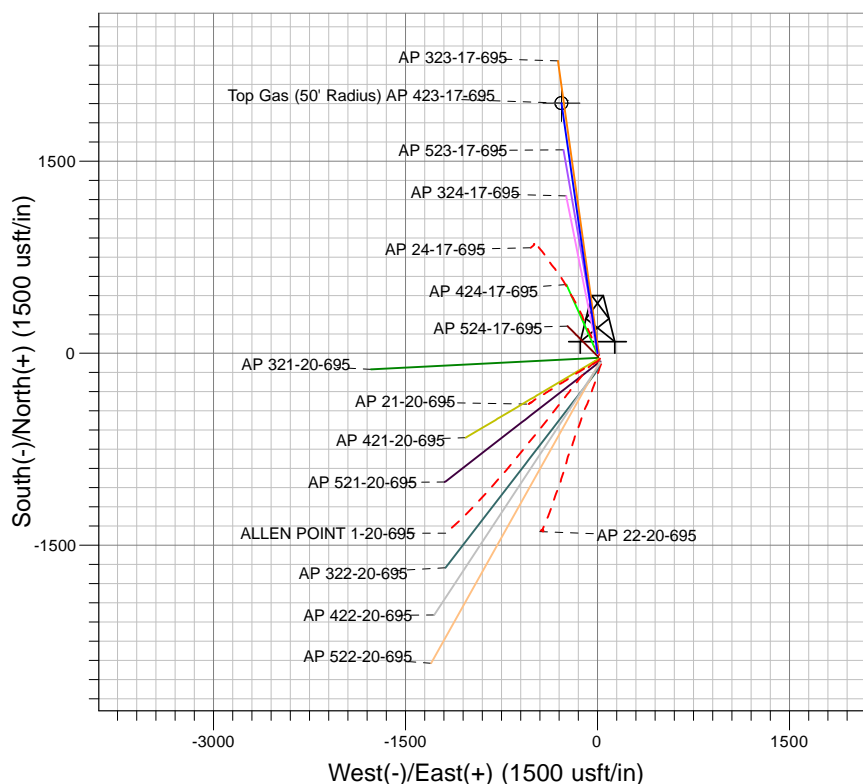
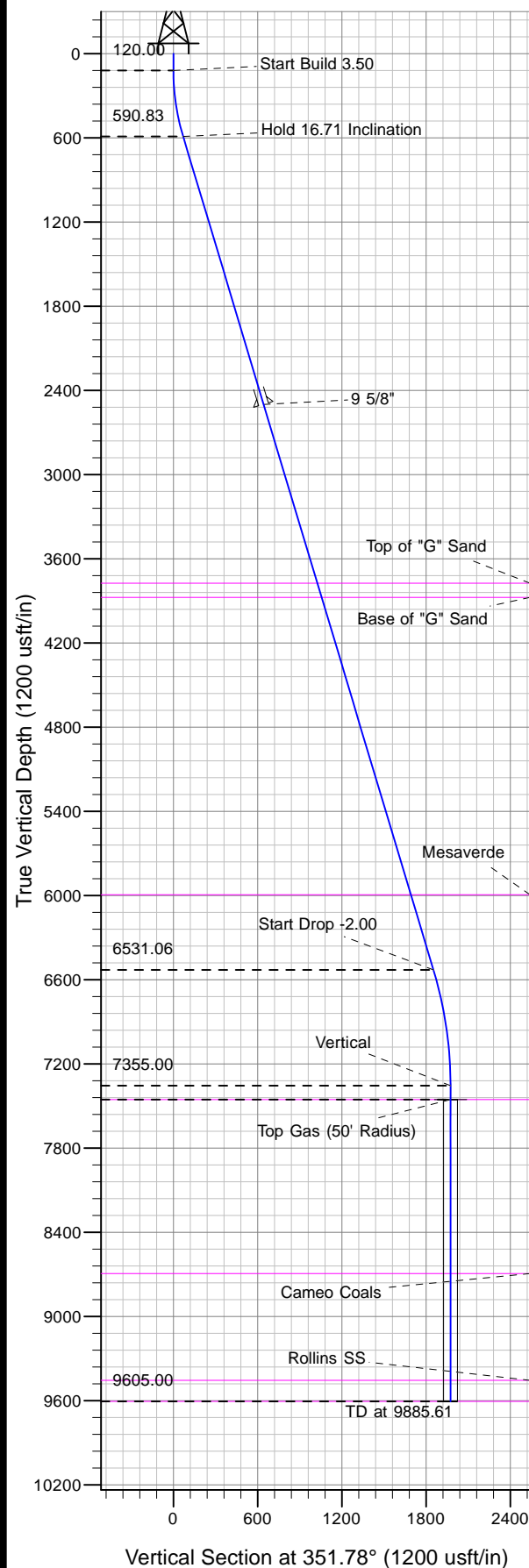




Well Name: AP 423-17-695  
Surface Location: AP 21-20-695 Pad  
North American Datum 1983 , US State Plane 1983, Colorado Central Zone  
Ground Elevation: 6909.00  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.00 0.00 1623301.40 2288323.99 39.51761 -108.02298 B11  
KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)



Project: AP 20-06S-095W  
Site: AP 21-20-695 Pad  
Well: AP 423-17-695  
Plan 2 29Aug13 kjs

Azimuths to True North  
Magnetic North: 10.46°  
Magnetic Field  
Strength: 52373.1snT  
Dip Angle: 65.79°  
Date: 7/16/2010  
Model: IGRF2005-10

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
120.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.50
590.83	597.57	16.71	351.78	68.46	-9.89	69.17	69.17	Hold 16.71 Inclination
6531.06	6799.86	16.71	351.78	1833.96	-265.07	1853.02	1853.02	Start Drop -2.00
7355.00	7635.61	0.00	0.00	1953.76	-282.39	1974.06	1974.06	Vertical
7455.00	7735.61	0.00	0.00	1953.76	-282.39	1974.06	1974.06	Top Gas
9605.00	9885.61	0.00	0.00	1953.76	-282.39	1974.06	1974.06	TD at 9885.61



## **PICEANCE VLY NAD 83**

**AP 20-06S-095W**

**AP 21-20-695 Pad**

**AP 423-17-695 - Slot B11**

**Wellbore #1**

**Plan: Plan 2 29Aug13 kjs**

## **Standard Planning Report - Geographic**

**12 November, 2013**



IBM Global Services  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well AP 423-17-695 - Slot B11
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
<b>Project:</b>	AP 20-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
<b>Site:</b>	AP 21-20-695 Pad	<b>North Reference:</b>	True
<b>Well:</b>	AP 423-17-695	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 2 29Aug13 kjs		

<b>Project</b>	AP 20-06S-095W, Garfield County, CO, 20-06S-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>	AP 21-20-695 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,623,258.80 usft	<b>Latitude:</b> 39.51750
<b>From:</b> Map		<b>Easting:</b>	2,288,342.20 usft	<b>Longitude:</b> -108.02291
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.591 °

Well	AP 423-17-695 - Slot B11					
Well Position	+N/-S	0.00 usft	Northing:	1,623,301.40 usft	Latitude:	39.51761
	+E/-W	0.00 usft	Easting:	2,288,323.99 usft	Longitude:	-108.02298
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,909.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2005-10	7/16/2010	10.461	65.788	52,373

<b>Design</b>	Plan 2 29Aug13 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	351.78

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.000	
597.57	16.71	351.78	590.83	68.46	-9.89	3.50	3.50	0.00	351.776	
6,799.86	16.71	351.78	6,531.06	1,833.96	-265.07	0.00	0.00	0.00	0.000	
7,635.61	0.00	0.00	7,355.00	1,953.76	-282.39	2.00	-2.00	0.00	180.000	
7,735.61	0.00	0.00	7,455.00	1,953.76	-282.39	0.00	0.00	0.00	0.000	Top Gas (50' Radius)
9,885.61	0.00	0.00	9,605.00	1,953.76	-282.39	0.00	0.00	0.00	0.000	

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well AP 423-17-695 - Slot B11
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
<b>Project:</b>	AP 20-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
<b>Site:</b>	AP 21-20-695 Pad	<b>North Reference:</b>	True
<b>Well:</b>	AP 423-17-695	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 2 29Aug13 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
0.00	0.00	0.00	0.00	0.00	0.00	1,623,301.40	2,288,323.99	39.51761	-108.02298
120.00	0.00	0.00	120.00	0.00	0.00	1,623,301.40	2,288,323.99	39.51761	-108.02298
<b>Start Build 3.50</b>									
500.00	13.30	351.78	496.60	43.46	-6.28	1,623,345.01	2,288,318.92	39.51773	-108.02300
597.57	16.71	351.78	590.83	68.46	-9.89	1,623,370.10	2,288,316.00	39.51780	-108.02302
<b>Hold 16.71 Inclination</b>									
1,000.00	16.71	351.78	976.25	183.01	-26.45	1,623,485.06	2,288,302.63	39.51811	-108.02308
1,500.00	16.71	351.78	1,455.12	325.34	-47.02	1,623,627.90	2,288,286.02	39.51851	-108.02315
2,000.00	16.71	351.78	1,934.00	467.66	-67.59	1,623,770.74	2,288,269.41	39.51890	-108.02322
2,500.00	16.71	351.78	2,412.87	609.99	-88.17	1,623,913.58	2,288,252.80	39.51929	-108.02330
2,590.97	16.71	351.78	2,500.00	635.88	-91.91	1,623,939.56	2,288,249.78	39.51936	-108.02331
<b>9 5/8"</b>									
3,000.00	16.71	351.78	2,891.75	752.32	-108.74	1,624,056.41	2,288,236.19	39.51968	-108.02337
3,500.00	16.71	351.78	3,370.62	894.64	-129.31	1,624,199.25	2,288,219.58	39.52007	-108.02344
3,922.22	16.71	351.78	3,775.00	1,014.83	-146.68	1,624,319.87	2,288,205.55	39.52040	-108.02350
<b>Top of "G" Sand</b>									
4,000.00	16.71	351.78	3,849.49	1,036.97	-149.88	1,624,342.09	2,288,202.97	39.52046	-108.02351
4,026.63	16.71	351.78	3,875.00	1,044.55	-150.97	1,624,349.70	2,288,202.08	39.52048	-108.02352
<b>Base of "G" Sand</b>									
4,500.00	16.71	351.78	4,328.37	1,179.30	-170.45	1,624,484.93	2,288,186.36	39.52085	-108.02359
5,000.00	16.71	351.78	4,807.24	1,321.62	-191.02	1,624,627.76	2,288,169.75	39.52124	-108.02366
5,500.00	16.71	351.78	5,286.11	1,463.95	-211.59	1,624,770.60	2,288,153.14	39.52163	-108.02373
6,000.00	16.71	351.78	5,764.99	1,606.27	-232.16	1,624,913.44	2,288,136.53	39.52202	-108.02381
6,240.16	16.71	351.78	5,995.00	1,674.64	-242.04	1,624,982.05	2,288,128.55	39.52221	-108.02384
<b>Mesaverde</b>									
6,500.00	16.71	351.78	6,243.86	1,748.60	-252.74	1,625,056.28	2,288,119.92	39.52241	-108.02388
6,799.86	16.71	351.78	6,531.06	1,833.96	-265.07	1,625,141.94	2,288,109.95	39.52265	-108.02392
<b>Start Drop -2.00</b>									
7,000.00	12.71	351.78	6,724.59	1,884.26	-272.34	1,625,192.42	2,288,104.08	39.52278	-108.02395
7,500.00	2.71	351.78	7,219.44	1,950.58	-281.93	1,625,258.98	2,288,096.34	39.52297	-108.02398
7,635.61	0.00	0.00	7,355.00	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
<b>Vertical</b>									
7,735.61	0.00	0.00	7,455.00	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
<b>Top Gas - Approx. Top Gas</b>									
8,000.00	0.00	0.00	7,719.39	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
8,500.00	0.00	0.00	8,219.39	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
8,975.61	0.00	0.00	8,695.00	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
<b>Cameo Coals</b>									
9,000.00	0.00	0.00	8,719.39	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
9,500.00	0.00	0.00	9,219.39	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
9,735.61	0.00	0.00	9,455.00	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
<b>Rollins SS</b>									
9,885.60	0.00	0.00	9,604.99	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
<b>TD</b>									
9,885.61	0.00	0.00	9,605.00	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
<b>TD at 9885.61</b>									



IBM Global Services  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well AP 423-17-695 - Slot B11
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
<b>Project:</b>	AP 20-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
<b>Site:</b>	AP 21-20-695 Pad	<b>North Reference:</b>	True
<b>Well:</b>	AP 423-17-695	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 2 29Aug13 kjs		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Top Gas (50' Radius) AF	0.00	0.00	7,455.00	1,953.76	-282.39	1,625,262.17	2,288,095.97	39.52298	-108.02398
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(usft)	(usft)			(in)	(in)
2,590.97	2,500.00	9 5/8"		9.625	12.250

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(usft)	(usft)				(°)	(°)
3,922.22	3,775.00	Top of "G" Sand				
4,026.63	3,875.00	Base of "G" Sand				
6,240.16	5,995.00	Mesaverde				
7,735.61	7,455.00	Approx. Top Gas				
8,975.61	8,695.00	Cameo Coals				
9,735.61	9,455.00	Rollins SS				
9,885.60	9,604.99	TD			0.000	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)		
120.00	120.00	0.00	0.00	Start Build 3.50	
597.57	590.83	68.46	-9.89	Hold 16.71 Inclination	
6,799.86	6,531.06	1,833.96	-265.07	Start Drop -2.00	
7,635.61	7,355.00	1,953.76	-282.39	Vertical	
7,735.61	7,455.00	1,953.76	-282.39	Top Gas	
9,885.61	9,605.00	1,953.76	-282.39	TD at 9885.61	