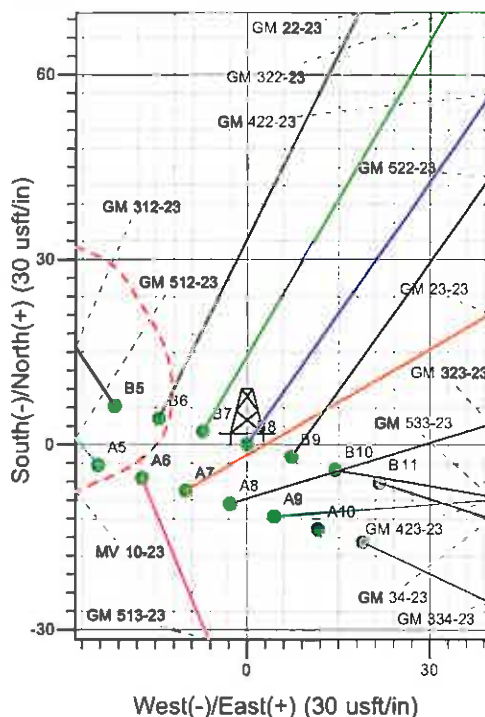
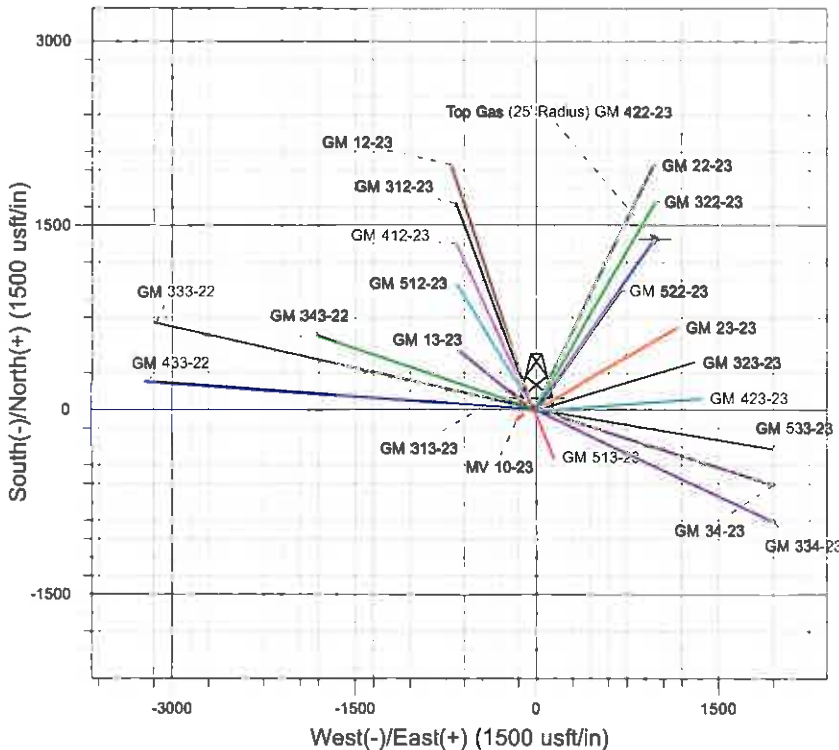
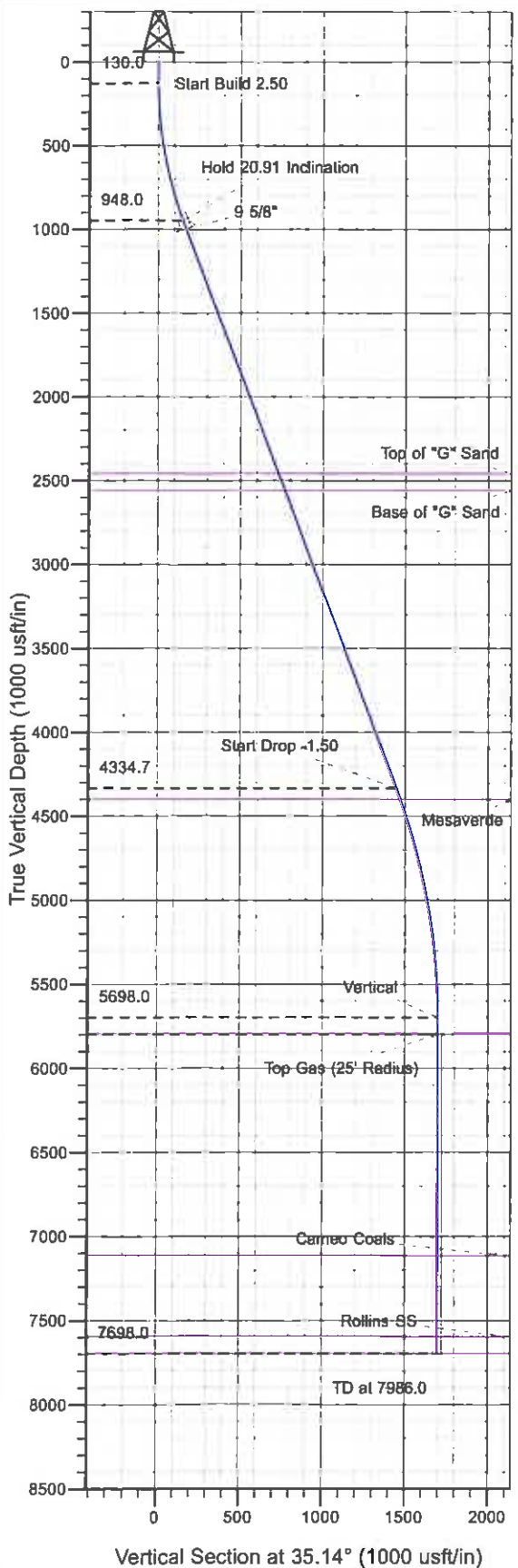




Well Name: GM 422-23  
 Surface Location: MV 10-23 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5976.0  
 +N/-S 0.0 +E/-W 0.0 Northing 1619647.96 Easting 2271251.54 Latitude 39° 30' 22.563 N Longitude 108° 4' 59.172 W Slot B8  
 KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs)



Project: GV 23-06S-096W  
 Site: MV 10-23 Pad  
 Well: GM 422-23  
 Design #1 04Oct10 kjs

**M** Azimuths to True North  
 Magnetic North: 10.48°  
 Magnetic Field  
 Strength: 52314.4nT  
 Dip Angle: 65.75°  
 Date: 10/4/2010  
 Model: IGRF2010

ANNOTATIONS

| TVD    | MD     | Inc   | Azi   | +N/-S  | +E/-W | VSec   | Departure | Annotation             |
|--------|--------|-------|-------|--------|-------|--------|-----------|------------------------|
| 130.0  | 130.0  | 0.00  | 0.00  | 0.0    | 0.0   | 0.0    | 0.0       | Start Build 2.50       |
| 948.0  | 968.4  | 20.91 | 35.14 | 123.4  | 86.9  | 150.9  | 150.9     | Hold 20.91 Inclination |
| 4334.7 | 4591.9 | 20.91 | 35.14 | 1181.5 | 831.7 | 1444.9 | 1444.9    | Start Drop -1.50       |
| 5698.0 | 5986.0 | 0.00  | 0.00  | 1387.2 | 976.6 | 1696.5 | 1696.5    | Vertical               |
| 5798.0 | 6086.0 | 0.00  | 0.00  | 1387.2 | 976.6 | 1696.5 | 1696.5    | Top Gas                |
| 7698.0 | 7986.0 | 0.00  | 0.00  | 1387.2 | 976.6 | 1696.5 | 1696.5    | TD at 7986.0           |

# **PICEANCE VLY NAD 83**

**GV 23-06S-096W**

**MV 10-23 Pad**

**GM 422-23 - Slot B8**

**Wellbore #1**

**Plan: Design #1 04Oct10 kjs**

## **Standard Planning Report - Geographic**

**09 February, 2011**

**Williams**  
 Planning Report - Geographic

|                  |                        |                                     |   |
|------------------|------------------------|-------------------------------------|---|
| <b>Database:</b> | Compass R5000 WIN AUTH | <b>Local Co-ordinate Reference:</b> | Well GM 422-23 - Slot B8                              |
| <b>Company:</b>  | PICEANCE VLY NAD 83    | <b>TVD Reference:</b>               | KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs) |
| <b>Project:</b>  | GV 23-06S-096W         | <b>MD Reference:</b>                | KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs) |
| <b>Site:</b>     | MV 10-23 Pad           | <b>North Reference:</b>             | True  |
| <b>Well:</b>     | GM 422-23              | <b>Survey Calculation Method:</b>   | Minimum Curvature                                     |
| <b>Wellbore:</b> | Wellbore #1            |                                     |   |
| <b>Design:</b>   | Design #1 04Oct10 kjs  |                                     |   |

|                    |  |                      |                             |
|--------------------|--|----------------------|-----------------------------|
| <b>Project</b>     | GV 23-06S-096W, Garfield County, CO, 23-06S-096W |                      |                             |
| <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>                  | MV 10-23 Pad |                     |                   |                          |                  |
| <b>Site Position:</b>        |              | <b>Northing:</b>    | 1,619,663.89 usft | <b>Latitude:</b>         | 39° 30' 22.707 N |
| <b>From:</b>                 | Map          | <b>Easting:</b>     | 2,271,201.54 usft | <b>Longitude:</b>        | 108° 4' 59.816 W |
| <b>Position Uncertainty:</b> | 0.0 usft     | <b>Slot Radius:</b> | 13.200 in         | <b>Grid Convergence:</b> | -1.629 °         |

|                             |                     |          |                            |                   |                      |                  |
|-----------------------------|---------------------|----------|----------------------------|-------------------|----------------------|------------------|
| <b>Well</b>                 | GM 422-23 - Slot B8 |          |                            |                   |                      |                  |
| <b>Well Position</b>        | <b>+N-S</b>         | 0.0 usft | <b>Northing:</b>           | 1,619,647.96 usft | <b>Latitude:</b>     | 39° 30' 22.563 N |
|                             | <b>+E-W</b>         | 0.0 usft | <b>Easting:</b>            | 2,271,251.54 usft | <b>Longitude:</b>    | 108° 4' 59.172 W |
| <b>Position Uncertainty</b> |                     | 0.0 usft | <b>Wellhead Elevation:</b> |                   | <b>Ground Level:</b> | 5,976.0 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> |
|                  | IGRF2010          | 10/4/2010          | 10.482                 | 65.750               | 52,314                     |

|                          |                                |                    |                      |                      |
|--------------------------|--------------------------------|--------------------|----------------------|----------------------|
| <b>Design</b>            | Design #1 04Oct10 kjs          |                    |                      |                      |
| <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) (usft)</b> | <b>+N-S (usft)</b> | <b>+E-W (usft)</b>   | <b>Direction (")</b> |
|                          | 0.0                            | 0.0                | 0.0                  | 35.14                |

| <b>Plan Sections</b>  |                 |             |                       |             |             |                         |                        |                       |         |                      |
|-----------------------|-----------------|-------------|-----------------------|-------------|-------------|-------------------------|------------------------|-----------------------|---------|----------------------|
| Measured Depth (usft) | Inclination (") | Azimuth (") | Vertical Depth (usft) | +N-S (usft) | +E-W (usft) | Dogleg Rate ("/100usft) | Build Rate ("/100usft) | Turn Rate ("/100usft) | TFD (") | Target               |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0         | 0.0         | 0.00                    | 0.00                   | 0.00                  | 0.000   |                      |
| 130.0                 | 0.00            | 0.00        | 130.0                 | 0.0         | 0.0         | 0.00                    | 0.00                   | 0.00                  | 0.000   |                      |
| 966.4                 | 20.91           | 35.14       | 948.0                 | 123.4       | 86.9        | 2.50                    | 2.50                   | 0.00                  | 35.144  |                      |
| 4,591.9               | 20.91           | 35.14       | 4,334.7               | 1,181.5     | 831.7       | 0.00                    | 0.00                   | 0.00                  | 0.000   |                      |
| 5,986.0               | 0.00            | 0.00        | 5,698.0               | 1,387.2     | 976.6       | 1.50                    | -1.50                  | 0.00                  | 180.000 |                      |
| 6,086.0               | 0.00            | 0.00        | 5,798.0               | 1,387.2     | 976.6       | 0.00                    | 0.00                   | 0.00                  | 0.000   | Top Gas (25' Radius) |
| 7,986.0               | 0.00            | 0.00        | 7,698.0               | 1,387.2     | 976.6       | 0.00                    | 0.00                   | 0.00                  | 0.000   |                      |

**Williams**  
**Planning Report - Geographic**

|                  |                        |                                     |   |
|------------------|------------------------|-------------------------------------|---|
| <b>Database:</b> | Compass R5000 WIN AUTH | <b>Local Co-ordinate Reference:</b> | Well GM 422-23 - Slot B8                              |
| <b>Company:</b>  | PICEANCE VLY NAD 83    | <b>TVD Reference:</b>               | KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs) |
| <b>Project:</b>  | GV 23-06S-096W         | <b>MD Reference:</b>                | KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs) |
| <b>Site:</b>     | MV 10-23 Pad           | <b>North Reference:</b>             | True  |
| <b>Well:</b>     | GM 422-23              | <b>Survey Calculation Method:</b>   | Minimum Curvature                                     |
| <b>Wellbore:</b> | Wellbore #1            |                                     |   |
| <b>Design:</b>   | Design #1 04Oct10 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          | 1,619,647.96        | 2,271,251.54       | 39° 30' 22.563 N | 108° 4' 59.172 W |  |
| 130.0                            | 0.00            | 0.00        | 130.0                 | 0.0          | 0.0          | 1,619,647.96        | 2,271,251.54       | 39° 30' 22.563 N | 108° 4' 59.172 W |  |
| <b>Start Build 2.50</b>          |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 966.4                            | 20.91           | 35.14       | 948.0                 | 123.4        | 86.9         | 1,619,768.86        | 2,271,341.90       | 39° 30' 23.783 N | 108° 4' 58.064 W |  |
| <b>Hold 20.91 Inclination</b>    |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 1,016.0                          | 20.91           | 35.14       | 994.3                 | 137.9        | 97.1         | 1,619,783.03        | 2,271,352.49       | 39° 30' 23.926 N | 108° 4' 57.934 W |  |
| <b>9 5/8"</b>                    |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 2,585.0                          | 20.91           | 35.14       | 2,460.0               | 595.8        | 419.4        | 1,620,231.58        | 2,271,687.73       | 39° 30' 28.452 N | 108° 4' 53.821 W |  |
| <b>Top of "G" Sand</b>           |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 2,692.1                          | 20.91           | 35.14       | 2,560.0               | 627.1        | 441.4        | 1,620,262.18        | 2,271,710.60       | 39° 30' 28.761 N | 108° 4' 53.540 W |  |
| <b>Base of "G" Sand</b>          |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 4,591.9                          | 20.91           | 35.14       | 4,334.7               | 1,181.5      | 831.7        | 1,620,805.30        | 2,272,116.51       | 39° 30' 34.240 N | 108° 4' 48.560 W |  |
| <b>Start Drop -1.50</b>          |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 4,664.8                          | 19.82           | 35.14       | 4,403.0               | 1,202.2      | 846.3        | 1,620,825.60        | 2,272,131.68       | 39° 30' 34.445 N | 108° 4' 48.374 W |  |
| <b>Mesaverde</b>                 |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 5,986.0                          | 0.00            | 0.00        | 5,698.0               | 1,387.2      | 976.6        | 1,621,006.80        | 2,272,267.10       | 39° 30' 36.273 N | 108° 4' 46.713 W |  |
| <b>Vertical</b>                  |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 6,086.0                          | 0.00            | 0.00        | 5,798.0               | 1,387.2      | 976.6        | 1,621,006.80        | 2,272,267.10       | 39° 30' 36.273 N | 108° 4' 46.713 W |  |
| <b>Top Gas - Approx. Top Gas</b> |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 7,405.0                          | 0.00            | 0.00        | 7,117.0               | 1,387.2      | 976.6        | 1,621,006.80        | 2,272,267.10       | 39° 30' 36.273 N | 108° 4' 46.713 W |  |
| <b>Cameo Coals</b>               |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 7,886.0                          | 0.00            | 0.00        | 7,598.0               | 1,387.2      | 976.6        | 1,621,006.80        | 2,272,267.10       | 39° 30' 36.273 N | 108° 4' 46.713 W |  |
| <b>Rolline SS</b>                |                 |             |                       |              |              |                     |                    |                  |                  |  |
| 7,986.0                          | 0.00            | 0.00        | 7,698.0               | 1,387.2      | 976.6        | 1,621,006.80        | 2,272,267.10       | 39° 30' 36.273 N | 108° 4' 46.713 W |  |
| <b>TD at 7886.0 - TD</b>         |                 |             |                       |              |              |                     |                    |                  |                  |  |

| Design Targets   |               |              |            |              |              |                 |                |                  |                  |  |
|--|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|------------------|--|
| Target Name  | Dip Angle (") | Dip Dir. (") | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude         | Longitude        |  |
| Top Gas (25' Radius) GI<br>- hit/miss target<br>- Shape<br>- plan hits target center<br>- Circle (radius 25.0) | 0.00          | 0.00         | 5,798.0    | 1,387.2      | 976.6        | 1,621,006.80    | 2,272,267.10   | 39° 30' 36.273 N | 108° 4' 46.713 W |  |

| Casing Points         |                       |        |      |                      |                    |  |
|-----------------------|-----------------------|--------|------|----------------------|--------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) |        | Name | Casing Diameter (in) | Hole Diameter (in) |  |
| 1,016.0               | 894.3                 | 9 5/8" |      | 9.625                | 12.250             |  |

**Williams**  
**Planning Report - Geographic**

|                  |                        |                                     |   |
|------------------|------------------------|-------------------------------------|---|
| <b>Database:</b> | Compass R5000 WIN AUTH | <b>Local Co-ordinate Reference:</b> | Well GM 422-23 - Skel B8                              |
| <b>Company:</b>  | PICEANCE VLY NAD 83    | <b>TVD Reference:</b>               | KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs) |
| <b>Project:</b>  | GV 23-06S-096W         | <b>MD Reference:</b>                | KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs) |
| <b>Site:</b>     | MV 10-23 Pad           | <b>North Reference:</b>             | True  |
| <b>Well:</b>     | GM 422-23              | <b>Survey Calculation Method:</b>   | Minimum Curvature                                     |
| <b>Wellbore:</b> | Wellbore #1            |                                     |   |
| <b>Design:</b>   | Design #1 04Oct10 kjs  |                                     |   |

| Formations            |                       |                  |           |         |                   |  |
|-----------------------|-----------------------|------------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name             | Lithology | Dip (") | Dip Direction (") |  |
| 2,585.0               | 2,460.0               | Top of "G" Sand  |           |         |                   |  |
| 2,692.1               | 2,560.0               | Base of "G" Sand |           |         |                   |  |
| 4,664.8               | 4,403.0               | Mesaverde        |           |         |                   |  |
| 6,086.0               | 5,798.0               | Approx. Top Gas  |           |         |                   |  |
| 7,405.0               | 7,117.0               | Cameo Coals      |           |         |                   |  |
| 7,886.0               | 7,598.0               | Rollins SS       |           |         |                   |  |
| 7,986.0               | 7,698.0               | TD               |           |         |                   |  |

| Plan Annotations      |                       |                   |              |                        |  |
|-----------------------|-----------------------|-------------------|--------------|------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                |  |
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                        |  |
| 130.0                 | 130.0                 | 0.0               | 0.0          | Start Build 2.50       |  |
| 966.4                 | 948.0                 | 123.4             | 86.9         | Hold 20.91 Inclination |  |
| 4,591.9               | 4,334.7               | 1,181.5           | 831.7        | Start Drop -1.50       |  |
| 5,986.0               | 5,698.0               | 1,387.2           | 976.6        | Vertical               |  |
| 6,086.0               | 5,798.0               | 1,387.2           | 976.6        | Top Gas                |  |
| 7,986.0               | 7,698.0               | 1,387.2           | 976.6        | TD at 7986.0           |  |