

# KANSAS CORPORATION COMMISSION ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

**RECEIVED**  
**JAN 12 2004**  
**KCC WICHITA**

Type Test:  Open Flow  Shut-in  
 Deliverability  Pressure  
 Test Date: 12-20-03 API No. 15 -103-21,091 **0000**

|  |   |                                       |   |  |                               |
|--|---|---------------------------------------|---|--|-------------------------------|
| Company<br><b>Monument Resources, Inc.</b>   |   | Lease<br><b>Gruendel</b>              |   | Well Number<br><b>#3</b>               |                               |
| County<br><b>Leavenworth</b>   | Location<br><b>N/2,S/2,NE</b>               | Section<br><b>12</b>                  | TWP<br><b>10S</b>   | RNG (E/W)<br><b>22E</b>                | Acres Attributed<br><b>40</b> |
| Field<br><b>Fairmount</b>  |   | Reservoir<br><b>McLouth</b>           | Gas Gathering Connection<br><b>COG Transmission Corporation</b> |  |                               |
| Completion Date<br><b>12/24/88</b>   |   | Plug Back Total Depth<br><b>1192'</b> | Packer Set at   |  |                               |
| Casing Size<br><b>4 1/2"</b>   | Weight<br><b>10.5#</b>                      | Internal Diameter                     | Set at<br><b>1192'</b>  | Perforations<br><b>1092' - 1100'</b>   | To                            |
| Tubing Size<br><b>2 3/8"</b>   | Weight<br><b>4.7#</b>                       | Internal Diameter                     | Set at<br><b>1080'</b>  | Perforations                           | To                            |
| Type Completion (Describe)<br><b>Gas</b>   | Type Fluid Production<br><b>Water (Nil)</b> |                                       | - Pump Unit or Flowing Control? Yes / No<br><b>Pump</b>         |  |                               |
| Producing Thru (Annulus / Tubing)<br><b>Annulus</b>  | % Carbon Dioxide<br><b>Nil</b>              |                                       | % Nitrogen<br><b>Nil</b>  |  | Gas Gravity - G <sub>g</sub>  |
| Vertical Depth(H)<br><b>1100'</b>  | Pressure Taps                               |                                       |   | (Meter Run) (Prover) Size<br><b>2"</b> |                               |
| Pressure Buildup: Shut in <b>12-19 2003</b> at <b>9:25</b> (AM) (PM) Taken <b>12-20 2003</b> at <b>10:00</b> (AM) (PM) |   |                                       |   |  |                               |
| Well on Line: Started _____ 19 at _____ (AM) (PM) Taken _____ 19 at _____ (AM) (PM)                                    |   |                                       |   |  |                               |

**OBSERVED SURFACE DATA**

Duration of Shut-in 24 Hours

| Static / Dynamic Property | Orifice Size inches | Circle one: Meter or Prover Pressure psig | Pressure Differential in (h) Inches H <sub>2</sub> O | Flowing Temperature t | Well Head Temperature t | Casing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>f</sub> ) or (P <sub>c</sub> ) |      | Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>f</sub> ) or (P <sub>c</sub> ) |      | Duration (Hours) | Liquid Produced (Barrels) |
|---------------------------|---------------------|---|--|-----------------------|-------------------------|--|------|--|------|------------------|---------------------------|
|                           |                     |   |  |                       |                         | psig   | psia | psig   | psia |                  |                           |
| Shut-In                   | ---                 | ---                                       | ---  | ---                   | ---                     | 18   | ---  | ---  | ---  | 24               | ---                       |
| Flow                      |                     |   |  |                       |                         |  |      |  |      |                  |                           |

**FLOW STREAM ATTRIBUTES**

| Plate Coefficient (F <sub>v</sub> ) (F <sub>p</sub> ) Mcfd | Circle one: Meter or Prover Pressure psia | Press Extension $\sqrt{P_m \times H_w}$ | Gravity Factor F <sub>g</sub> | Flowing Temperature Factor F <sub>t</sub> | Deviation Factor F <sub>pv</sub> | Metered Flow R (Mcfd) | GOR (Cubic Feet/ Barrel) | Flowing Fluid Gravity G <sub>m</sub> |
|--|---|---|-------------------------------|---|----------------------------------|-----------------------|--------------------------|--------------------------------------|
|  |   |   |                               |   |                                  |                       |                          |                                      |

**(OPEN FLOW) (DELIVERABILITY) CALCULATIONS**

(P<sub>e</sub>)<sup>2</sup> = \_\_\_\_\_ : (P<sub>w</sub>)<sup>2</sup> = \_\_\_\_\_ : P<sub>d</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ : (P<sub>e</sub>)<sup>2</sup> = 0.207  
(P<sub>e</sub>)<sup>2</sup> = \_\_\_\_\_

|  |   |   |   |   |  |         |  |
|--|---|---|---|---|--|---------|--|
| (P <sub>e</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup><br>or<br>(P <sub>e</sub> ) <sup>2</sup> - (P <sub>d</sub> ) <sup>2</sup> | (P <sub>e</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup> | Choose formula 1 or 2:<br>1. P <sub>e</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup><br>2. P <sub>e</sub> <sup>2</sup> - P <sub>d</sub> <sup>2</sup><br>divided by: P <sub>e</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> | LOG of formula 1. or 2. and divide by:<br>$\frac{P_e^2 - P_w^2}{P_e^2 - P_w^2}$ | Backpressure Curve Slope = "n"<br>Assigned Standard Slope | n x LOG $\left[ \frac{P_e^2 - P_w^2}{P_e^2 - P_w^2} \right]$ | Antilog | Open Flow Deliverability Equals R x Antilog Mcfd |
|  |   |   |   |   |  |         |  |

Open Flow Mcfd @ 14.65 psia Deliverability Mcfd @ 14.65 psia

The undersigned authority, on behalf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct. Executed this the 8th day of January 2004.

\_\_\_\_\_  
Witness (if any)  
For Commission

\_\_\_\_\_  
For Company  
**President**  
Checked by

I declare under penalty or perjury under the laws of the state of Kansas that I am authorized to request exempt status under Rule K.A.R. 82-3-304 on behalf of the operator Monument Resources, Inc. and that the foregoing information and statements contained on this application form are true and correct to the best of my knowledge and belief based upon gas production records and records of equipment installation and/or of type completion or upon use of the gas well herein named.

I hereby request a permanent exemption from open flow testing for the Gruendel #3 gas well on the grounds that said well:

(Check one)

- is a coalbed methane producer
- is cycled on plunger lift due to water
- is a source of natural gas for injection into an oil reservoir undergoing ER
- is on vacuum at the present time; KCC approval Docket No. \_\_\_\_\_
- is incapable of producing at a daily rate in excess of 150 mcf/D

Date: January 8, 2004

Signature: \_\_\_\_\_



Title: President

**Instructions:** All active gas wells must have at least an original G-2 form on file with the conservation division. If a gas well meets the eligibility criteria set out in KCC regulation K.A.R. 82-3-304, the operator may complete the statement provided above in order to obtain a testing exemption.

At some point during the succeeding calendar year, wellhead shut-in pressure shall be measured after a minimum of 24 hours shut-in/buildup time and shall be reported on the front side of this form under "observed surface data." Shut-in pressure shall thereafter be reported yearly in the same manner.

The G-2 form conveying the newest shut-in pressure reading shall be filed with the Wichita office no later than thirty (30) days after the taking of the pressure reading. The form must be signed and dated on the front side as though it was a verified report of test results.