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June 26, 2002

Darrell S. Hanson Utah Division of Public Utilities Heber M. Wells 160 East 300 South P.O. Box 45802 Salt Lake City, Utah 84145

Re: Guideline Letter For Coal Bed Methane Development Under The Wexpro Agreement

## Dear Mr. Hanson:

In recent years coal bed methane (CBM) has become a successful target for new gas production in a variety of basins throughout the United States. Although CBM production has become a mainstream activity, it still has risks and each area has characteristics unique to it. Questar Gas Company (QGC), by virtue of the Wexpro Agreement, has rights to potential CBM production from reservoirs overlaying existing production in some of its fields. To date, Wexpro has not ventured into this form of development. A new CBM opportunity presents itself as a pilot program proposed by Wexpro's partner in the Brady field in Wyoming. However, CBM gas production was never contemplated when the Wexpro Agreement was written. This guideline letter proposes to establish a Wexpro Agreement methodology that will allow Wexpro to participate in CBM drilling and production for the benefit of QGC under the Wexpro Agreement.

## <u>CBM Geology/Engineering</u>

There are a number of unique characteristics of CBM reservoirs that differentiate them from conventional gas reservoirs. One significant difference is how gas hydrocarbons are stored in the reservoir. In a conventional reservoir, hydrocarbons, including gas, are contained within pores between sand grains. In a CBM reservoir the methane is bound at a molecular level to the coal molecules, by a process called "adsorption". This characteristic has important implications for production and economics. Another unique characteristic is how the hydrocarbons are recovered. In a conventional reservoir, production generally occurs when the higher pressured reservoir is exposed through production equipment to reduced pressures. In a CBM reservoir the bulk of production will not occur until the reservoir has had a pressure drop below a certain level to allow the process of "desorbtion" (the reverse of adsorption) to occur.

Generally CBM reservoirs contain water. The water maintains the pressure within the reservoir. Therefore, to more quickly reduce the pressure within the coal reservoir and allow an acceleration of the process of desorbtion, water production is desired. This process of reducing the reservoir pressure by producing water is called "dewatering". This is unique, because in conventional reservoirs water production is not desirable and is to be avoided because it reduces gas production. Often in CBM reservoirs water will be produced in large quantities for some time before gas in any significant quantities will be produced. With continued production a CBM project will gradually experience decreased volumes of water production and increased volumes of gas production. It is not uncommon for the maximum rate of gas production to occur Coal Bed Methane Guideline Letter June 26, 2002 Page 2

many months to several years after initial production begins. Because CBM production is so tied to reducing reservoir pressure to enable the gas to begin to flow, it is sometimes beneficial to have some wells produce only water to reduce overall reservoir pressure to the point that other wells can produce gas.

## Wexpro Agreement Considerations

The Wexpro Agreement "paying well" determination assumes that each well is a standalone economic venture and that its economic value can be determined within a 30 day evaluation period. However CBM production is predicated upon development of many wells as a single cohesive, interlinked unit working together below ground through subsurface communication to dewater the reservoir. Wells that produce water on the periphery of the CBM development contribute to enhanced gas production from the interior wells. The BLM acknowledges this as evidenced by the fact that any coalbed well that produces either water or gas will automatically be considered a paying well for participating area expansion purposes without having to prove commerciality on a traditional standalone basis in federal units. CBM development differs from traditional wells with regards to paying well determinations in the following respects: 1) a single well is not a standalone economic venture, 2) wells support and benefit each other's production and should be evaluated as a group or program, 3) it will take a significantly longer evaluation time than 30 days to determine economics of a CBM program. If paying well determinations were made as specified in the Wexpro Agreement, typical CBM wells would never be paying wells, even though they have the potential to ultimately add significant reserves and production at reasonable finding costs.

As a result of the requirement to dewater the reservoir coalbed methane projects are unique in that they require considerable patience during the development stage when dewaterering occurs. In exchange for this patience good CBM wells can produce significant quantities of gas for a long time. A provision in the Wexpro Agreement allows for the recovery by Wexpro of funds used during the development period before wells are placed in service (see AFUDC as defined in I-37 of the Wexpro Agreement). This provision allows for recovery of the cost of capital expended prior to wells being placed in service and is determined by applying the base rate of return as defined in I-44 of the Wexpro Agreement. In addition, AFUDC associated with a project is added to the investment base along with all other costs incurred during the construction phase (see I-41 of the Wexpro Agreement).

Therefore, it is proposed that the following guidelines be approved to allow for the development of the potential CBM reserves governed by the Wexpro Agreement:

## CBM Guidelines

 The Wexpro Agreement specifies Wexpro development rights in a well or zone based on a variety of criteria, including wells drilled within 1980'circles of Prior Company or Prior Wexpro wells. Using this criteria in a CBM project could have the effect of putting future cost of service wells in a high water volume well (dewatering well) that supports gas production from a well (or wells) outside the 1980' circle. This application of the Wexpro agreement would be less beneficial to QGC. We, therefore, propose to pool Wexpro's interest with other working interest owners in all or a portion of the wells in the defined project area. Coal Bed Methane Guideline Letter June 26, 2002 Page 3

- 2) The CBM program will be evaluated on a project basis rather than on a single well basis for purposes of determining commerciality under the Wexpro Agreement (operating costs, taxes, royalties plus 50% of drilling costs). Furthermore, additions to the project will follow the convention that the BLM uses in determining participating area expansion i.e. any well that produces water or gas subsequent to the creation of an initial participating area, is deemed to be a contributor to production and automatically expands the participating area. Accordingly, once a paying group of wells or project is established then new increments to the approved commercial project will be added automatically using the same criteria the BLM uses in expanding CBM participating areas, i.e. the well produces either gas or water.
- 3) The commerciality evaluation period will be extended beyond the usual 30 days to a period of time to allow for evaluation of the entire project. The evaluation time period will be dependent upon when the project is clearly determined to be economic, i.e. when production has reached its maximum and has entered a normal decline. The total evaluation period for CBM projects can be lengthy, extending to one or more years. Wexpro will determine, in conjunction with the hydrocarbon monitor, when this point occurs and will submit a project based "paying well" determination for monitor approval. Wexpro will be at risk for the project development capital until a paying project has been established.
- 4) As Wexpro will be at risk for development capital during the dewatering phase with no opportunity for recovery of its investment Wexpro will be allowed to collect in the Operator Service Fee, on a monthly basis, operating costs and AFUDC for all capital incurred until the project is deemed paying as specified in section 3 above. Due to the potential length of time associated with the dewatering phase Wexpro will waive its right to add the accumulated AFUDC to the project investment base in exchange for not having to refund the AFUDC and operating costs collected should the project ultimately be determined to be non-commercial. This will effectively reduce the investment earning base below what is currently allowed by the Wexpro Agreement. If the project is determined to be economic, capital costs incurred, excluding AFUDC would be added to the earning base. QGC will receive the gas produced from a CBM project unless and until the project is determined to be non-commercial.

Please indicate your approval of the proposed guideline in the signature boxes below. Of course should you wish to discuss this please let me know.

Respectfully yours,

Gary L. Nordloh President and CEO, Wexpro Company

Coal Bed Methane Guideline Letter June 26, 2002 Page 4

Approved: Utah Division of Public Utilities

David E. Evans

By:

Evans Consulting Company

By: Sutton

Date: 8 July 2002

Approved: Staff of the Wyoming Public Service Commission

By: by authority of the Wyoming PSC Approved:

Date: July 19 2002

Date: June 26, 2002