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August 8, 2018

**VIA HAND DELIVERY**

Heather Riley  
Oil Conservation Division  
New Mexico Department of Energy,  
Minerals and Natural Resources  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

**Re: Application of Hilcorp Energy Company for an Order Amending the Well Density and Location Requirements and Administrative Exceptions of the Special Rules for the Blanco-Mesaverde Gas Pool, Rio Arriba and San Juan Counties, New Mexico.**

Dear Ms. Riley,

Hilcorp Energy Company (OGRID No. 372171) filed the enclosed application with the Division clerk yesterday, requesting a hearing before a Division hearing examiner on September 6, 2018. However, pursuant to the Director's authority under 19.15.4.20.B NMAC, Hilcorp respectfully requests that the application be set for hearing before the Commission at the earliest available date. If you agree to do so, we ask that you advise us on which Commission docket this matter will be set as soon as practicable to facilitate our preparation of timely notice.

Thank you for your attention to this matter and please feel free to call if you have any questions or require additional information.

Sincerely,

Adam G. Rankin

**ATTORNEY FOR**

**HILCORP ENERGY COMPANY**

cc: Florene Davidson, via email  
William Brancard, Esq. via email

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**STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES  
OIL CONSERVATION DIVISION**

**APPLICATION OF HILCORP ENERGY  
COMPANY TO AMEND THE WELL  
DENSITY AND LOCATION  
REQUIREMENTS AND ADMINISTRATIVE  
EXCEPTIONS OF THE SPECIAL RULES  
FOR THE BLANCO-MESAVERDE GAS  
POOL, RIO ARriba AND SAN JUAN  
COUNTIES, NEW MEXICO.**

CASE NO. 16403

**APPLICATION**

Hilcorp Energy Company, ("Hilcorp") (OGRID No. 372171), through its undersigned counsel, hereby files this application with the Oil Conservation Division for an order amending the Well Density Requirements for the Blanco-Mesaverde Gas Pool (72319) to permit up to eight wells in a standard 320-acre gas proration and spacing unit ("GPU") and up to four wells within either quarter section in a GPU. In support of this application, Hilcorp states:

1. Hilcorp is the operator of approximately 5,329 wells currently producing from the Blanco-Mesaverde Gas Pool, which covers a large portion of the San Juan Basin across Rio Arriba and San Juan Counties, New Mexico.

2. Hilcorp also operates thousands of wells that are currently producing from other formations in the region that are well situated to be simultaneously dedicated and re-completed within the Blanco-Mesaverde Gas Pool to recover additional reserves which are not being adequately drained under the existing well density pattern in the existing Special Rules. In

addition, Hilcorp has identified areas in the pool where infill wells can develop reserves that would otherwise remain unproduced.

3. The Blanco-Mesaverde Gas Pool is governed by Special Rules which provide for 320-acre GPUs on which as many as four wells may be drilled with only two wells in each 160-acre quarter section. *See* Order No. R-8170, as superseded by Order No. R-10987-A, and amended by Order No. R-10987-A(1), effective Dec. 2, 2002. The Special Rules currently provide:

**I. ACREAGE AND WELL LOCATION REQUIREMENTS**

**A. Standard GPU (Gas Proration Unit):** A standard GPU in the Blanco-Mesaverde Pool shall be 320 acres, more or less, comprising any two contiguous quarter sections of a single section that is a legal subdivision of the U. S. Public Land Surveys.

**B. Well density:**

(1) Up to four (4) wells may be drilled on a standard GPU, as follows:

(a) the FIRST OPTIONAL INFILL WELL drilled on a GPU shall be located in the quarter section not containing the INITIAL Mesaverde well;

(b) the SECOND OPTIONAL INFILL WELL drilled on a GPU shall be located in a quarter-quarter section not containing a Mesaverde well and within a quarter section not containing more than one (1) Mesaverde well;

(c) the THIRD OPTIONAL INFILL WELL drilled on a GPU shall be located in a quarter-quarter section not containing a Mesaverde well and within a quarter section not containing more than one (1) Mesaverde well;

(d) at the discretion of the operator, the second or third optional infill well may be drilled prior to the drilling of the first optional infill well;

(e) no more than two wells shall be located within either quarter section in a GPU; and

(f) any deviation from the above-described well density requirements shall be authorized only after hearing.

## **II. ADMINISTRATIVE EXCEPTIONS:**

The Division Director, in accordance with Division Rule 104, may administratively grant an exception to the well locations [sic] requirements of I.C above upon application to the Division which includes notification by certified mail-return receipt requested to affected parties. [See Division Rule 1207.A(2)].

Order No. R-10987-A(1).

4. Under more than thirty applications filed since January 2018, Hilcorp has requested and received orders granting 62 well density exceptions under the Special Rules. These orders have permitted Hilcorp to re-complete and simultaneously dedicate existing wells within the Blanco-Mesaverde Gas Pool that had been targeting and developing gas reserves in deeper formations.

5. In every case, Hilcorp's testimony and exhibits on the geology and reservoir characteristics supported increasing well density to allow Hilcorp to target additional reserves in the Mesaverde formation which would remain unproduced under existing well density requirements imposed by the Special Rules.

6. Based upon prior geologic and engineering studies, as well as engineering data from these recent re-completions, Hilcorp has determined that the Blanco-Mesaverde Gas Pool Rules should be updated to permit up to eight wells per 320-acre GPU and four wells in each quarter section within a GPU to prevent waste and increase ultimate gas recovery.

7. Hilcorp's request and amendment of the Special Rules is supported by review of the history and development of the Blanco-Mesaverde Gas Pool.

8. The Blanco-Mesaverde Gas Pool was first created by the New Mexico Oil Conservation Commission ("Commission") in 1949 under Order No. 799 in Case No. 163. In

that Order the Commission adopted 320-acre gas proration units ("GPU") on the assumption that one well would adequately drain and develop 320-acres. *See* Order R-10987-A, ¶ 7.

9. As the pool was developed, it became apparent that a single well could not drain a 320-acre gas proration unit. By 1974, the Commission had concluded that one well per GPU was inadequate. *See* Order No. R-1670-T. To avoid waste, the Commission ruled that more than one well was necessary to drain the reserves and increased the well density in the pool to 160-acre infill well spacing by approving an optional infill well within the 320-acre GPUs. *See* Order R-10987-A, ¶ 9.

10. After further development of the pool on 160-acre spacing, Hilcorp's predecessor-in-interest Burlington Resources Oil and Gas Company ("Burlington") determined in the 1990s that two wells per 320-acre GPU (160-acre spacing) also was inadequate to adequately drain the pool. It presented geologic studies and reservoir engineering data to the Division showing that the Mesaverde formation is a tight, low-permeability reservoir which tends to produce low ultimate recoveries per well. Burlington's studies also demonstrated that not all sandstones that comprise the Mesaverde are continuous throughout the formation, or even within a single GPU or a 160-acre quarter section. Based on these studies, the Division concluded in 1998 that 160-acre well spacing was insufficient to drain most of the acreage in the pool due to its low-permeability and because 160-acre well spacing did not ensure that wells would intersect and fully develop discontinuous sandstones across the pool. The Division therefore issued Order R-10987-A which increased the pool's well density from two wells per 320-acre GPU to four wells per 320-acre GPU, or 80-acre infill well spacing. *See* Order R-10987-A, ¶ 2.

11. At the 1998 hearing, Burlington's witnesses further noted that existing data indicated areas within the pool had wells which were draining only 40 acres. They testified that

further down-spacing in the pool would likely be necessary to prevent waste and that "sometime in the future, someone will be back before you asking for permission to drill additional wells beyond the four wells per GPU." *See* Case No. 12069, Hearing. Tr., dated Oct. 29, 1998, at 49:1-3 (testimony of Brent Smolik).

12. After twenty years of development on 80-acre well spacing, the geologic and engineering data available confirms what Burlington predicted in 1998: That increasing well density in the pool to 40-acre infill spacing is necessary to prevent waste and drain unrecovered gas reserves from the tight, low-permeability sandstones which comprise the Mesaverde formation.

13. Accordingly, Hilcorp requests that the Special Rules for the Blanco-Mesaverde Gas Pool be amended as follows:

#### **I. ACREAGE AND WELL LOCATION REQUIREMENTS**

**A. Standard GPU (Gas Proration Unit):** A standard GPU in the Blanco-Mesaverde Pool shall be 320 acres, more or less, comprising any two contiguous quarter sections of a single section that is a legal subdivision of the U. S. Public Land Surveys.

#### **B. Well density:**

(1) Up to ~~four-eight~~ (48) vertical wells may be drilled on a standard GPU; ~~as follows:~~

~~(a) the FIRST OPTIONAL INFILL WELL drilled on a GPU shall be located in the quarter section not containing the INITIAL Mesaverde well;~~

~~(b) the SECOND OPTIONAL INFILL WELL drilled on a GPU shall be located in a quarter-quarter section not containing a Mesaverde well and within a quarter section not containing more than one (1) Mesaverde well;~~

~~(c) the THIRD OPTIONAL INFILL WELL drilled on a GPU shall be located in a quarter-quarter section not containing a~~

~~Mesaverde well and within a quarter section not containing more than one (1) Mesaverde well;~~

~~(d) at the discretion of the operator, the second or third optional infill well may be drilled prior to the drilling of the first optional infill well;~~

(e2) ~~No~~ more than ~~two~~ four (4) wells shall be located within either quarter section in a GPU; and

(f3) ~~Any~~ deviation from the above-described well density requirements shall be authorized only after hearing.

## II. ADMINISTRATIVE EXCEPTIONS:

The Division Director, in accordance with ~~Division Rule 104~~ Subsection C of 19.15.15.11 NMAC, may administratively grant an exception to the well locations requirements of ~~I.C-B~~ above upon application to the Division which includes notification by certified mail-return receipt requested to affected ~~parties~~ persons. [See ~~Division Rule 1207.A(2)~~ 19.15.2.7.A(8) NMAC].

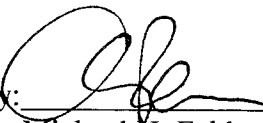
14. Copies of this application have been provided to all operators in the northwest portion of the state identified to Hilcorp by the Division.

15. Approval of this application will be in the best interest of conservation, the prevention of waste, and the protection of correlative rights.

WHEREFORE, Hilcorp Energy Company requests that this application be set before an Examiner of the Oil Conservation Division on September 6, 2018, and, after notice and hearing as required by law, that the Division enter an order granting this application.

Respectfully submitted,

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**ATTORNEYS FOR HILCORP ENERGY COMPANY**



CASE 16403 **Application of Hilcorp Energy Company to Amend the Well Density And Location Requirements And Administrative Exceptions of the Special Rules for the Blanco-Mesaverde Gas Pool, Rio Arriba and San Juan Counties, New Mexico.** Applicant seeks to amend the Well Density Requirements of the Special Rules for the Blanco-Mesaverde Gas Pool (72319) for purposes of increasing well density for Mesaverde wells, Rio Arriba and San Juan Counties, New Mexico. Applicant seeks to update Rule I.B for the Special Rules for the Blanco-Mesaverde Gas Pool to authorize infill drilling, or simultaneous dedications of well recompletions, for up to eight wells within in a standard 320-acre gas spacing unit ("GPU") by increasing the well density from the current maximum of four (4) wells (80-acre infill) as provided in Order R-10987-A(1) to a maximum of eight (8) wells (40-acre infill) per 320-acre GPU and up to four (4) wells within either quarter section within a GPU. Applicant also proposes to eliminate the well location requirements for each GPU and to update regulatory references in the Administrative Exceptions provision.

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