

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

**IN THE MATTER OF THE APPLICATION OF  
ENERGEN RESOURCES CORPORATION FOR  
CREATION OF THE CARRACAS CANYON  
PRODUCTION AREA AND FOR EXCEPTION TO  
THE WELL LOCATION PROVISIONS OF THE  
SPECIAL RULES AND REGULATIONS FOR THE  
BASIN-FRUITLAND COAL GAS POOL, RIO  
ARRIBA COUNTY, NEW MEXICO**

**CASE NO. 14287  
ORDER NO. R-13119**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on March 19, 2009, at Santa Fe, New Mexico, before Examiners Richard Ezeanyim, David Brooks and Terry Warnell.

NOW, on this 1st day of May, 2009, the Division Director, having considered the testimony, the record, and the recommendations of the Examiners,

**FINDS THAT:**

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) The Applicant, Energen Resources Corporation, ("Applicant" or "Energen"), seeks an order from the Division establishing the Carracas Canyon Production Area for the Fruitland Coal Formation, Basin Fruitland Coal Gas Pool (71629) comprised of the following lands located in Rio Arriba County, New Mexico.

**TOWNSHIP 32 NORTH RANGE 4 WEST, NMPM**

Section	8	Lots 5, 6, 7, 8, S/2 S/2
Section	9	Lots 5, 6, 7, 8, S/2 S/2
Section	10	Lots 5, 6, 7, 8, S/2 S/2
Section	11	Lots 5, 6, 7, 8, S/2 S/2
Section	12	Lots 5, 6, 7, 8, S/2 S/2
Section	13	All
Section	14	All
Section	15	All
Section	16	All

**TOWNSHIP 32 NORTH, RANGE 4 WEST, NMPM (Cont.)**

Section	17	All
Section	18	All
Section	19	All
Section	20	All
Section	21	All
Section	22	All
Section	23	All
Section	24	All
Section	25	All
Section	26	All
Section	27	All
Section	28	All
Section	29	All
Section	30	All
Section	31	All
Section	32	All
Section	33	All
Section	34	All
Section	35	All
Section	36	All

**TOWNSHIP 32 NORTH, RANGE 5 WEST, NMPM**

Section	10	All
Section	11	All
Section	12	All
Section	13	All
Section	14	All
Section	15	All
Section	16	E/2, E/2 W/2
Section	21	E/2
Section	22	All
Section	23	All
Section	24	All
Section	25	All
Section	26	All
Section	27	All
Section	34	N/2
Section	35	N/2, SE/4
Section	36	All

**TOWNSHIP 31 NORTH, RANGE 5 WEST, NMPM**

Section	1	Lots 3, 4, SW/4
Section	2	Lots 1, 2, 3, 4, N/2 NE/4, N/2 NW/4

(3) Energen also seeks an exception to the well setback location provisions of the Rules for the Basin-Fruitland Coal Gas Pool authorizing well locations within 10 feet to section, quarter-section, or interior quarter-quarter section lines or subdivision inner boundaries in conformance with Rule 7(a)(2) of the pool rules for the pool. Energen seeks the setback exception for all wells to be drilled to the Fruitland Coal Formation within the Carracas Canyon Production Area, but at no point closer than 660 feet to the outer boundaries of the Production Area.

(4) Rule 7(a) of the pool rules for the Basin-Fruitland Coal Gas pool as promulgated by Division Order No. R-8768-F dated July 17, 2003 provides as follows:

*(1) A well drilled or recompleted on a standard or non-standard spacing unit in the Basin-Fruitland Coal (Gas) Pool shall be located no closer than 660 feet to the outer boundary of the spacing unit and no closer than 10 feet to any interior quarter-quarter section line or subdivision inner boundary.*

*(2) A well drilled or recompleted within a federal exploratory unit is not subject to the 660-foot setback requirement to the outer boundary of the spacing unit, provided however:*

*(i) the well shall not be closer than 10 feet to any section, quarter section, or interior quarter-quarter section line or subdivision inner boundary;*

*(ii) the well shall not be closer than 660 feet to the outer boundary of the federal exploratory unit;*

*(iii) if the well is located within the federal exploratory unit area but adjacent to an existing or prospective spacing unit containing a non-committed tract or partially committed tract, it shall not be closer than 660 feet to the outer boundary of its spacing unit;*

*(iv) if the well is located within a non-committed or partially committed spacing unit, it shall not be closer than 660 feet to the outer boundary of its spacing unit;*

*(v) if the well is located within a participating area but adjacent to an existing or prospective spacing unit that is not within the same participating area, it shall not be closer than 660 feet to the outer boundary of the participating area; and*

*(vi) if the well is located within an exploratory unit area but in an existing or prospective spacing unit that is a non-participating spacing unit, it shall not be closer than 660 feet to the outer boundary of its spacing unit.*

(5) The Applicant appeared at the hearing through legal counsel, and the Applicant's land witness presented the following testimony.

(a) Energen is the operator of the Carracas Canyon Unit Area, the Unitized Formation of which is the Fruitland Coal formation. The original boundaries of the Unit and the proposed Carracas Canyon Production Area are coterminous. Periodic contraction of the original Unit resulted in the establishment of three Fruitland Coal formation Participating Areas.

(b) Energen is the only Fruitland Coal formation operator within the Participating Areas and the remaining acreage within the original Unit boundaries. Energen also owns one-hundred percent of the leasehold working interest within the Unit, Participating Areas and the proposed Production Area.

(c) Nearly all of the mineral interests underlying the Carracas Canyon Production Area are owned by the U.S. Forest Service and are administered by the Bureau of Land Management under several leases, all of which are owned by Applicant. A relatively small proportion of the Production Area is fee and Applicant owns one-hundred percent of the lease interest on those lands. The surface of the Production Area is located within the Carson National Forest and is predominated by significantly sloping terrain, arroyos and other watersheds, making access problematic.

(d) Frequent discoveries of archeological resources within the Production Area often require the re-location of well sites and access is further limited by seasonal drilling restrictions prescribed by the Forest Service. As a cumulative result of the restrictions on the surface and the well location requirements under the current pool rules, Applicant is prevented from developing and producing otherwise recoverable hydrocarbon reserves from the Fruitland Coal Formation in a significant number of areas within the proposed Production Area.

(e) The Carracas Canyon Production Area lands are located within the low-productivity area of the Basin-Fruitland Coal Gas Pool defined by Rule 7(C) of the Special Rules for the Pool.

(f) Applicant requests blanket authorization to drill additional vertical and horizontal Basin-Fruitland Coal Gas wells in complete spacing units within the interior boundaries of the Production Area in conformance with pool Rule 7(a)(2)(i) that currently permits locations as close as 10 feet to section lines, quarter-sections, or interior quarter-quarter section lines or subdivision inner-boundaries within federal exploratory units. However, Applicant does not seek exception for any locations closer than the current 660 foot minimum setback distance from the outer boundaries of the Production

Area. Applicant seeks to have the exception applied throughout the proposed Production Area, including locations within and adjacent to the Participating Areas, without the need for further administrative review by the Division.

(g) By virtue of the operation of the 660 foot setback from the outer boundaries of the Production Area, none of the well locations planned by the Applicant under its proposal will encroach on spacing units adjoining the Production Area at any point.

(h) By making the exception to the well location requirements applicable throughout the Carracas Canyon Production Area, Energen proposes to drill horizontal wells of greater length, thereby improving its recovery factor and adding incremental reserves. Further, Energen anticipates that the exception will allow it additional flexibility to avoid unnecessary surface damages and access additional reserves that surface restrictions have made inaccessible.

(i) The Applicant has discussed this application with the Bureau of Land Management (BLM) and they did not oppose the application.

(6) The Applicant's geologist testified as follows:

(a) The Fruitland Coal formation is a homogeneous reservoir to the extent that it is extensive, productive and correlatable over a wide area.

(b) The Fruitland Coal formation is thicker to the southwest and becomes thinner along a northeast channelized elongation pattern toward the vicinity of the Carracas Canyon Production Area where coal seam thicknesses of approximately twenty feet are reliably encountered.

(c) In more immediate vicinities, the coal formation is compartmentalized, primarily as a result of abundant faulting and fracturing. Compartmentalization within the areas covered by 320-acre spacing units is common and the recovery of gas can be impeded as a result. The ability to drill wells with longer horizontal lengths would serve to overcome these impediments and improve gas flows and recovery factors in the area as a result.

(7) The Applicant's Engineering witness presented the following testimony:

(a) The "stand-up" or "lay-down" configuration of a number of 320-acre production units, along with the well location restrictions under the current rules result in gas recovery factors of approximately 50%. Energen has determined it will be necessary to drill additional wells within these spacing units to recover the gas reserves. However, the ability to increase the lateral length of horizontal wells within the Production Area would add to incremental reserves by use of a single well bore. Further, the simulator analysis used by the Applicant demonstrates an increase in recoverable reserves that corresponds to well length.

(b) In certain stand-up units with existing locations where Applicant is currently limited to drilling 1,320 feet laterals under the existing rules, Energen has determined that it will realize approximately 53% recovery factor for the 4.53 bcf of original gas in place. Reducing the setback to ten feet from the boundary of the spacing unit would allow the well length to be increased by approximately 98% to 2,620 feet, increasing the recovery factor to approximately 66%, resulting in the recovery of approximately 0.60 bcf of incremental reserves.

(c) In the vicinity of the Carracas Canyon Production Area, drilling horizontal wells along an east/west orientation in lay-down units is preferred in order to take advantage of formational fracture orientations. By way of example, in many lay-down units, Applicant is limited to horizontal well lengths of approximately 2,000 feet under the current rules. By reducing the restriction on the setback locations, Applicant would be able to increase the lateral length by 650 feet which would allow for the recovery of approximately 0.18 bcf of incremental reserves of original gas in place.

(d) In certain undeveloped spacing units, Applicant plans to utilize new or pre-existing surface locations in adjoining units. Under the proposed exception, Applicant would be able to increase the length of the lateral by an additional 1,300 feet to approximately 5,260 feet, while remaining within the ten foot setback as currently permitted for federal exploratory units. The increased lateral length will result in an increased recovery factor of 4%, or approximately 0.36 bcf of incremental reserves of original gas in place.

(e) The production of coalbed methane gas by extended laterals will not cause accelerated recovery, but instead adds reserves beyond what are available under the current well location restrictions.

(f) Under the more flexible well location rules proposed by the Applicant, at no location would a horizontal wellbore penetrate the coal formation at a point closer than ten feet from the section line or spacing unit boundary. Further, by observing the planned 660 foot setback around the perimeter of the Production Area, there is no increased likelihood of interference across the production area.

(g) In addition to providing access to additional reserves, the added flexibility in well locations and drilling designs enhances the operator's ability to reduce mechanical risk.

(h) Flexibility in locations will also facilitate the operator's ability to remain within the productive coal seam during drilling, thereby reducing geologic risk.

(i) Without the increased flexibility to locate wells within the Carracas Canyon Production Area, it will be necessary to drill additional wells to recover the same or reduced volumes of reserves. The added costs of drilling these additional wells will

adversely affect project economics and poses a substantial likelihood of premature abandonment of reserves.

(8) An exception to the pool rules for the Basin-Fruitland Coal Gas Pool to allow flexibility for well locations within the production unit area will increase the ultimate recovery of gas reserves and will not impair correlative rights. In addition, the exception will minimize the number of wells needed to efficiently recover reserves, and will facilitate the location of wells and facilities, serving to minimize surface disturbance.

(9) Approval of this Application will allow the production of additional coalbed methane gas reserves that would otherwise go un-recovered. Approval of this Application will be in the interests of conservation, the prevention of waste and the protection of correlative rights.

**IT IS THEREFORE ORDERED THAT:**

(1) The Application of Energen Resources Corporation for creation of the Carracas Canyon Production Area is hereby approved. Those lands in Rio Arriba County, New Mexico described in Finding Paragraph (2) above, are designated as the Carracas Canyon Production Area, limited to the Fruitland Coal Formation.

(2) The request for an exception from the well setback location provisions of the Rules for the Basin-Fruitland Coal Gas Pool (71629) for authorization to drill additional vertical and horizontal Fruitland Coal Gas wells in complete spacing units within the interior boundaries of the Carracas Canyon Production Area in conformance with pool Rule 7(a)(2)(i) permitting locations as close as 10 feet to section lines, quarter-section, or interior quarter-quarter section lines or subdivision inner-boundaries is approved.

(3) A drilled or recompleted well within the Carracas Canyon Production Area is not subject to the 660-foot setback requirement to the outer boundary of the spacing unit established by Rule 7(a)(1) of the Special Pool Rules for the Basin-Fruitland Coal Gas Pool, provided however:

(i) the well shall not be closer than 10 feet to any section, quarter section, or interior quarter-quarter section line or subdivision inner boundary;

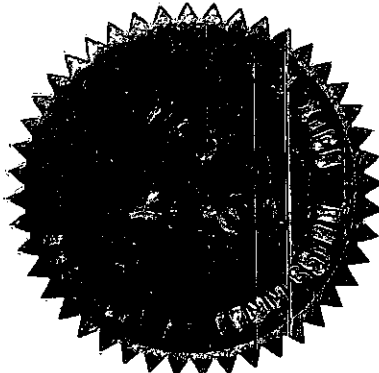
(ii) the well shall not be closer than 660 feet to the outer boundary of the Carracas Canyon Production Area.

(4) Applications for permits to drill Fruitland Coal Formation wells within the Carracas Canyon Production Area may be approved administratively by the Division's District III office through the Division's established APD review and approval process without the need for further notice or hearing. The exception shall be effective throughout the Carracas Canyon Production Area, including locations within and

adjacent to the Participating Areas. Excepted from this approval, however, are any locations closer than 660 feet to the outer boundaries of the Carracas Canyon Production Area. Applications for permits to drill any well at proposed locations closer than 660 feet to the outer boundaries of the Carracas Canyon Production Area shall follow the established procedures for approvals of unorthodox well locations.

(5) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in dark ink, appearing to read "Mark E. Fesmire".

MARK E. FESMIRE, P.E.  
Director