

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

**IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:**

**CASE NO. 14295  
ORDER NO. R-13132**

**APPLICATION OF KOCH EXPLORATION  
COMPANY, LLC, CONOCOPHILLIPS COMPANY,  
BURLINGTON RESOURCES OIL AND GAS  
COMPANY LP, AND ENERGEN RESOURCES  
CORPORATION FOR APPROVAL OF A PILOT  
INCREASED DENSITY WELL PROJECT IN THE  
BASIN-FRUITLAND COAL  
GAS POOL, SAN JUAN COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on April 16, 2009, at Santa Fe, New Mexico before Examiners David K. Brooks and Terry Warnell.

NOW, on this 9<sup>th</sup> day of June, 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 of the subject matter.

Background

(2) By this application Koch Exploration Company, LLC ("Koch"), ConocoPhillips Company ("Conoco"), Burlington Resources Oil and Gas Company, LP ("Burlington") and Energen Resources Corporation ("Energen") (collectively "Applicants") seek approval for a pilot project to drill up to eight additional infill wells (third and fourth wells) to the Fruitland Coal formation, in the Basin-Fruitland Coal Gas Pool, in certain spacing units located in Township 29 North, Range 9 West in San Juan County, New Mexico.

(3) Koch is the operator of the original and one optional infill well (more specifically described below) completed in the Fruitland Coal formation, Basin-Fruitland Coal Gas Pool, in each of the following standard, 320-acre, more or less, spacing units:

**Township 29 North, Range 9 West**

**a. Section 21: W/2**

- (1) A. B. Geren Well No. 1 (API No. 30-045-27401)  
475 feet FSL & 1,060 feet FWL
- (2) A. B. Geren Well No. 1-A (API No. 30-045-31392)  
920 feet FNL & 1,575 feet FWL

**b. Section 29: E/2**

- (1) A. B. Geren Well No. 6 (API No. 30-045-27362)  
965 feet FNL & 1,690 feet FEL
- (2) A. B. Geren Well No. 6A (API No. 30-045-31388)  
1,175 feet FSL & 1,345 feet FEL

**c. Section 32: E/2**

- (1) Aggie State 32 No. 1 (API No. 30-045-28090)  
2,070 feet FNL & 810 feet FEL
- (2) Aggie State 32 No. 1A (API No. 30-045-32360)  
1,840 feet FSL & 1,475 feet FEL

(4) Conoco and Burlington are the operators of the original and one optional infill well (more specifically described below) completed in the Fruitland Coal formation, Basin-Fruitland Coal Gas Pool, in each of the following standard, 320-acre, more or less, spacing units:

**Township 29 North, Range 9 West**

**a. Section 20: E/2**

- (1) Hamner No. 9S (API No. 30-045-34497)  
310 feet FSL & 1,222 feet FEL
- (2) Hamner No. 9 (API No. 30-045-23421)  
1,020 feet FNL & 1,090 feet FEL

**b. Section 33: W/2**

- (1) San Juan No. 23S (API No. 30-045-33603)  
2,265 feet FNL & 1,705 feet FWL
- (2) San Juan No. 23 (API No. 30-045-07654)  
1,738 feet FSL & 826 feet FWL

(5) Energen is the operator of the original and one optional infill well (more specifically described below) completed in the Fruitland Coal formation, Basin-Fruitland Coal Gas Pool, in the following standard 320-acre, more or less, spacing unit:

**Township 29 North, Range 9 West**

**a. Section 28: W/2**

- (1) Federal 29-9-28 No.2 (API No. 30-045-28740)  
1,000 feet FSL & 810 feet FWL
- (2) Federal 29-9-28 No. 3 (API No. 30-045-32096)  
1,780 feet FNL & 1,950 feet FWL

(6) Well density in the Basin-Fruitland Coal Gas Pool is governed by the Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool, as most recently amended by Order No. R-8768-F, issued in Case No. 12888 on July 17, 2003. These rules provide for 320-acre units, with up to two wells allowed in each unit (subject to certain conditions), provided that the wells must be in separate quarter sections.

(7) Applicants seek authorization for a pilot project to drill up to eight additional Basin Fruitland Coal Gas optional infill wells, one well per quarter-section, in the following area (the Pilot Project Area):

**Township 29 North, Range 9 West, NMPM**

Section 20: SE/4  
Section 21: SW/4  
Section 28: W/2  
Section 29: E/2  
Section 32: NE/4  
Section 33: NW/4.

(8) Applicants further propose that each of the referenced units be simultaneously dedicated to the additional coal gas wells authorized hereby, as well as the original and first optional infill wells identified in finding paragraphs (3), (4) and (5), above.

(9) In undertaking the pilot project, Applicants propose to conduct pressure, production and other tests to determine whether the drilling of additional wells at a greater density than allowed under Rule 7(d), as adopted in Order No. R-8768-F, would result in greater economic recovery of gas and associated hydrocarbons from the reservoir.

(10) Each of the proposed well locations in the pilot project will conform to the setback provisions of Rule 7(a) of the Special Pool Rules for the Basin-Fruitland Coal Gas Pool. None of the surface or bottomhole locations will be located closer than 660 feet to the outer boundary of a spacing unit or closer than 10 feet to any interior quarter section or quarter-quarter section line or subdivision inner boundary.

**Parties and Evidence**

(11) At the hearing, Applicants appeared through counsel and presented land, geologic and engineering evidence in support of their application.

(12) No other party appeared at the hearing or otherwise opposed the granting of the application.

(13) On March 31, 2009, Applicants met with representatives of the United States Bureau of Land Management (BLM) and the Division in Aztec, New Mexico and presented their proposal for a Basin Fruitland Coal infill pilot project.

(14) By letter dated April 6, 2009 Steve Henke, Field Office Manager for the BLM, wrote the Division expressing support for the Application.

(15) By email dated April 14, 2009 Steve Hayden, District Geologist for Division, wrote to the Division expressing support for the Application.

(16) Applicants presented technical evidence at the hearing to the following effect:

- a. The Pilot Project Area and surrounding units that the Applicants operate are located in the Low Productivity Area of the Basin-Fruitland Coal Gas Pool, as defined in Rule 7.b(2) of the Special Pool Rules for the Basin-Fruitland Coal Gas Pool.
- b. The depositional history of the Fruitland Coal formation was conducive of a high degree of stratigraphic variability, due to alternating transgression and regression of the shoreline, erosion from channels and streams that meandered through swampy areas and eroded peat deposits as the coals were forming, uneven compaction loads that caused thickening and thinning of the coal zones, and variations in ash content.
- c. Analysis of a cross-section of the Pilot Project Area indicates that, while some coals can be correlated, others are present only in some wells or areas, indicating a probability that the proposed additional wells will intersect coal zones or stringers that cannot be produced from any existing well.
- d. Production decline curves plotting production from 69 parent wells (drilled on 320-acre spacing) and 64 existing optional infill wells (drilled on effective 160-acre spacing) within Township 29 North, Range 9 West, including the Pilot Project Area, indicate that optional infill wells have not significantly, if at all, accelerated the decline of production from the parent wells.
- e. Production decline curves plotting production from parent wells (drilled on 320-acre spacing) within the Pilot Project Area and existing optional infill wells (drilled on effective 160-acre spacing) within the Pilot Project Area, indicate that, except in one case, optional infill wells have not significantly, if at all, accelerated the decline of production from the parent wells. In the single case where the parent well showed a production decline after completion of the optional infill well, that decline was probably

attributable to factors other than interference from the optional infill well.

- f. Analysis of Estimated Ultimate Recovery (EUR) from original parent wells and existing optional infill wells in the Pilot Project Area demonstrates poor yields based on current spacing and an overall Recovery Factor of no more than 41.4% of Original Gas-in-Place from the Pilot Project Area.

#### Analysis and Conclusions

(17) Based on the testimony and well logs that Applicants presented the Fruitland Coal formation in the Pilot Project Area is composed of multiple discontinuous zones or stringers of coal.

(18) It is reasonably probable that there are significant reserves of gas within the Pilot Project Area that will not be produced by existing wells, and the drilling of up to eight additional infill wells, as a pilot project to determine the feasibility of recovering a greater percentage of Basin-Fruitland Coal Gas, will prevent waste and increase the ultimate recovery of gas from the Pilot Project Area, and possibly from the entire pool.

(19) Approval of this Application authorizing the drilling of additional Fruitland Coal Gas wells on each of the spacing units within the Pilot Project Area will provide valuable information to the Fruitland Coal Committee, BLM and the Division to determine optimal well densities for ensuring the greatest ultimate recovery of gas and associated hydrocarbons from the Basin-Fruitland Coal Gas Pool, will prevent waste and will not impair correlative rights. Accordingly this Application for an increased density pilot project should be approved.

#### **IT IS THEREFORE ORDERED THAT:**

(1) This application for an order authorizing an Increased Density Pilot Project in the Pilot Project Area of the Basin-Fruitland Coal Gas Pool (Pool Code 71629) is approved.

(2) Koch Exploration Company, LLC (OGRID 12807), ConocoPhillips Company (OGRID 217817), Burlington Resources Oil and Gas Company, LP (OGRID 14538) and Energen Resources Corporation (OGRID 162928) are hereby permitted to implement a 1280- acre, more or less, pilot project, and to drill and complete up to eight additional infill wells, in the Basin-Fruitland Coal Gas Pool within the existing spacing

units established in the following area in San Juan County, New Mexico, in order to assess optimal well density for wells in the Low Productivity Area of the Basin-Fruitland Coal Gas Pool:

**Township 29 North, Range 9 West**

Section 20: SE/4  
Section 21: SW/4  
Section 28: W/2  
Section 29: E/2  
Section 32: NE/4  
Section 33: NW/4.

(3) No two additional infill wells drilled pursuant to this order shall be located in the same quarter section. Each of the existing spacing units in which additional infill wells are drilled pursuant to this Order shall be simultaneously dedicated to the additional infill well or wells so drilled, in addition to the original Fruitland Coal well and the existing infill well on such unit.

(4) Applicants are permitted exceptions to the well location and well density requirements of Rule 7 of the "Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool," as established by Commission Order No. R-8768-F, to the extent provided in this Order.

(5) The additional infill wells will be drilled in conformity with the provisions of Rule 7(a) of the Special Pool Rules for the Basin-Fruitland Coal Gas Pool, and none of the surface or bottomhole locations shall be located closer than 660 feet to the outer boundary of a spacing unit or closer than 10 feet to any interior quarter section or quarter-quarter section-line or subdivision inner boundary.

(6) Annually, on or before the anniversary of the date of issuance of this Order, Applicants shall meet with representatives of the Division and the Farmington field office of the US Bureau of Land Management to provide them with geological and engineering data for wells drilled under the project. Within 30 days after each such meeting, Applicants shall provide a written summary of the events and data reported at such meeting to the Division's Santa Fe office and to BLM's Farmington field office.

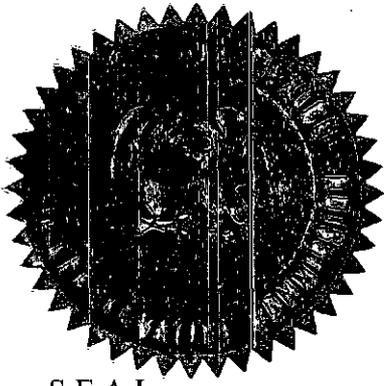
(7) Applicants will be allowed three years to drill the wells in the project area. Not later than five years after the date of issuance of this Order, Applicants shall present a comprehensive written report of their overall findings from the project to the Division's Santa Fe office, to the BLM's Farmington field office, and to all affected persons, as

defined in Division Rule 4.12.A. The report shall contain details on all pilot project operations, including well completions, well testing, pressure tests, production data, wellhead pressures, and line pressures.

(8) If more time is needed to reach reliable conclusions, Applicants shall file a hearing application with the Division for an extension of the pilot project, with appropriate notice.

(9) 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.



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

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

MARK E. FESMIRE, P.E.  
Director