Report of Columbia Natural Resources, Inc.

On
Pine Hill Field

I. Overview of Field History and Development

Pine Hill Field is located in the Town of Cohocton, Steuben County, New York, and is defined by four existing wells drilled by Columbia Natural Resources, Inc. ("Columbia" or "CNR"). These wells are:

WELL NAME	CNR WELL NO.	API NO.
S&D Farms #2	623144	31-101-22759-02
Peck	623516	31-101-22766-00
Wolcott	623284	31-101-22760-01
S&D Farms #1	623504	31-101-22758-01

The proposed spacing units shown on Exhibit A to the executed Stipulation dated *October 26, 2001*, form a narrow ribbon that encompasses an area approximately four miles long in a northwest - southeast direction. Wells in the Pine Hill Field produce natural gas from the Ordovician - Black River formation at an average depth of approximately 7400 feet. The field was discovered by the successful drilling and completion of the S&D Farms #2 Well in 1999.

For the purposes of selecting drill sites and forming spacing units, Columbia has relied on seismic data as well as information gained from drilling and completing the wells in the field. Seismic data is the result of a common method of geophysical analysis to define subsurface geologic structures using the generation, reflection, refraction, detection and analysis of elastic waves in the earth. CNR's extensive seismic coverage of the field area is depicted on the map attached to the Stipulation as Exhibit D.

To date, no pipeline has been constructed for S&D Farms #1, Well No. 623504. While preliminary indications are that the well is capable of producing gas in commercial quantities, CNR continues to evaluate its economic viability for connection to pipe.

II. Geologic Overview

The Pine Hill Field is a seismically defined gas field in the Ordovician - Black River formation. The northern and southern extent of the field are defined by high angle normal faults

(a fracture in the rock in which there has been displacement or movement of the sides relative to one another) with up to 130 feet of throw, similar to the producing grabens of the Glodes Corners Road Field and the Muck Farm Field. The area between the faults is nonregional secondary dolomite in the Black River having the configuration of a structural graben. The graben is an isolated structural feature described as a long narrow trough within the earth's crust bounded by faults which are conducive to the migration of gas within its boundaries. However, in the absence of transcurrent faults (a fault which cuts across the main body of the graben generally perpendicular to graben trend), gas will not migrate beyond the boundaries of the graben. While no evidence of transcurrent faults has been detected within the field area, seismically defined transcurrent faults determine the eastern and western boundaries of the field. The graben varies in width from 1500 feet to nearly 3000 feet.

The limits to the field are the seismically defined graben edges and transcurrent fault zones. The faulted limit of the reservoir to the north and south are respectively 660 feet south of the north unit lines and 660 feet north of the south unit lines. Regional limestone provides a trapping mechanism to the north and south of the bounding faults on the reservoir. Transcurrent features control the extent of the dolomitization in the Black River Formation on the northwest and southeast, limiting the reservoir to the area between these features. Similarly, the western limit of both the Glodes Corners Road Field and the Muck Farm Field coincide with seismically defined transcurrent fault zones. These transcurrent fault zones may appear as deep-seated faults on a seismic section that can be correlated in a cross-strike direction. The seismic expression of the graben is less apparent to the northwest, suggesting that dolomitization is less extensive. Towards the southeast portion of the reservoir, the trend weakens and broadens, which in several areas has been indicative of nearby transcurrent faulting. The southeasternmost seismic line and the northwesternmost seismic line contain no evidence of the projected graben trend at the Black River horizon. As shown on Exhibit D, seismic coverage is excellent over the proposed spacing units.

The reservoir was formed in several stages. Rejuvenation of underlying basement faults allowed mineral-rich fluids to migrate up section to alter the Black River formation. These fluids dissolved large sections of limestone forming cave systems in the Black River and selectively dolomitized sections of the formation in the early stages of reservoir development. Later, the fluids pervasively dolomitized much of the Black River, especially in the core of the graben. Due to overburden pressure, the cave systems eventually collapsed, creating a reservoir with vugular to cavernous porosity from dolomitization, and fracture porosity associated with the fault systems rooted in the basement.

Brine encountered in the Black River is acidic and is saturated with high concentrations of magnesium, calcium, sodium, and potassium. The thermal gradient is higher than the Appalachian Basin average, with bottom hole temperatures around 150 degrees Fahrenheit. Saddle dolomite seen in the samples is suggestive of hydrothermal alteration. A significant amount of dead oil is present in the upper 60 feet of the reservoir and occludes a significant amount of available porosity. Conodont alteration shows the reservoir to be well within the gas window, but too thermally mature for oil production.

Analogies can be made between the Black River production in the Pine Hill Field and the Glodes Corners Road Field and the Muck Farm Field in Steuben County, New York and can possibly be made to the Albio-Scipio Field and the Stoney Point Field in Michigan and the Dover Field in Ontario, Canada. References which detail these and other Trenton/Black River fields include:

Public Record from the Matter of the Glodes Corners Road Field, Rulings After Public Hearing, Field-wide Spacing Rules and the Integration of Interests pursuant to Environmental Conservation law (ECL)23-0501 and 23-0901;

Public Record from the Matter of the Muck Farm Field, Rulings After Public Hearing, Field-wide Spacing Rules and the Integration of Interests pursuant to Environmental Conservation Law (ECL) 23-0501 and 23-0901;

AAPG Studies in Geology #29, 1988;

Hurley, N.F. and Budros, R., 1990, "Albion-Scipio and Stoney Point Fields," U.S.A. Michigan Basin;

E.A. Beaumont and N.H. Foster, eds., "Stratigraphic Traps I: AAPG Treatise of Petroleum Geology", Atlas of Oil and Gas Fields, p. 1-33; and

Schwochow, S., 2000, "New Gas Prospects in Ordovician Black River and Trenton Group Carbonates of the Appalachian Basin", Petroleum Frontiers, Vol. 17, no. 1.

CNR's interpretation of the graben, based on analysis of its seismic data, is shown on Exhibit D to the Stipulation, which also shows the location of the individual seismic lines. This interpretation reflects subsurface conditions in the Ordovician - Black River formation indicating a field with defined limits, thus obviating the need for future spacing rules but potentially allowing future infill development.

III. Overview of Proposed Units:

The proposed units were formed to maximize recovery of the gas underlying the field, to optimize economics for each well drilled and to fairly compensate all affected landowners. Efforts were made to adhere to legislative intent with respect to uniformity in unit size, however, due to the varying width of the graben structure and the location of the wells, the units vary in size from 382.25 acres to 435.12 acres. The criteria used in defining the units include:

- Geologic and seismic description of the reservoir indicate a rectangular shape with preferential flow in an east - west direction. This preferential flow conclusion is supported by the fact that the Pine Hill Field has the identical structural displacement as was previously seen in the Glodes Corners Road Field. In that field, the preferential flow was determined by the observed interference between some of the wells. No testing has been done to indicate the presence of communication within

the wells in the Pine Hill Field although none is anticipated due to low flow capacity based on well performance.

- Initial data obtained in the drilling of the wells as reflected on the chart attached as Appendix 1. This chart reflects information which is no longer subject to confidentiality provisions of ECL Section 23-0313(1)(d).

- Well Completion Reports which are no longer subject to the confidentiality provisions of ECL Section 23-0313(1)(d) are available for public review at NYSDEC, Division of Mineral Resources, 625 Broadway, 3rd Floor, Albany, NY and NYSDEC, Region 8 Headquarters, 6274 East Avon-Lima Road, Avon, NY.

- Well logs which are no longer subject to the confidentiality provisions of ECL Section 23-03130(1)(d) are available for public review at NYSDEC, Region 8 Headquarters, 6274 East Avon-Lima Road, Avon, NY.

- Position of the wells as drilled was another controlling factor used in designing the units.

A drawdown test on the Wolcott Well and the Peck Well were started in mid-November 2000, but due to a series of equipment failures, all of the data was lost. The wells have been treated and compression was installed. We are currently evaluating the economic feasibility of additional stimulation for production improvement.

Despite initial bottom hole and surface hole pressures similar to those in the Glodes Corners Road Field, the wells in the Pine Hill Field have lower deliverability due to low formation capacity. Unit configuration was designed so that the units abut each other, thus protecting the correlative rights of the affected mineral owners. Potentially, the units are large enough to support infill drilling should it be determined that reserves are not being fully recovered or if it is determined that recovery of reserves can be economically accelerated.

IV. Individual Unit Justifications:

<u>S&D Farms #2, Well No. 623504:</u>

Northern unit line - generally 660 feet north of the northern side of the graben;

Eastern unit line - generally midway between the subject well and the Peck, Well No. 623516;

Southern unit line - generally 660 feet south of the southern side of the graben; and

Western unit line - located near a transcurrent fault indicated by the weakening of the signature shown on the seismic shot along Route 371.

<u>Peck, Well No. 623516:</u>

Northern unit line - generally 660 feet north of the northern side of the graben;

Eastern unit line - generally midway between the subject well and the Wolcott, Well No. 623284;

Southern unit line - generally 660 feet south of the southern side of the graben; and

Western unit line - generally midway between the subject well and the S&D Farms #2, Well No. 623504.

Wolcott, Well No. 623284:

Northern unit line - generally 660 feet north of the northern side of the graben;

Eastern unit line - generally midway between the subject well and the S&D Farms #1, Well No. 623144;

Southern unit line - generally 660 feet south of the southern side of the graben; and

Western unit line - generally midway between the subject well and the Peck, Well No. 623516.

S&D Farms #1, Well No. 623144:

Northern unit line - generally 660 feet north of the northern side of the graben;

Eastern unit line - located near a transcurrent fault indicated by the weak signature of the seismic shot close to the unit line;

Southern unit line - generally 660 feet south of the southern side of the graben; and

Western unit line - generally midway between the subject well and the Wolcott, Well No. 623284.

v. Future Drilling:

As set forth above, the Pine Hill Field is defined by the four existing wells. The northern and southern boundaries are defined by the graben. The length of the graben, being the eastern and western boundaries of the field are defined by transcurrent faulting systems. Due to the defined nature of the field, any drilling outside of the defined field should have no impact on the field itself. The possibility of future extension wells does not exist for this field.

On the other hand, infill drilling may be a future possibility to capture unrecoverable reserves and/or accelerate the recovery of reserves within the field.

Respectfully submitted this the 5th day of October, 2001.

Columbia Natural Resources, Inc.

by: _____
Mary Sue Schulberg
Senior Attorney and Assistant Secretary

APPENDIX 1

Well Name	**S&D Farms #2**	**Peck**	**Wolcott**	**S&D Farms #1**
CNR Well No.	623504	623516	623284	623144P
API No.	31-101-22758-01	31-101-22766-00	31-101-22760-01	31-101-22759-02
Initial Surf. psig	2380	2370	2393.1	2202.2
Initial BHP psig	2819.8	2902.0	2851.1	2628.1
IOF, mmcd	1.2	2.7	3.2	0.9
Date on Line	11/29/2000	11/27/2000	11/13/2000	NOL