

PGA UNIT APPLICATION
Basin Fruitland Coal Formation
San Juan County, New Mexico

INTRODUCTION

Thompson Engineering and Production Corporation (TEPC), a New Mexico Corporation, located at 7415 E. Main St., Farmington, NM 87402, requests approval to create the PGA Exploratory Unit in the Fruitland Coal formation. The PGA Unit would include Federal and State lands in T23 and 24N and R11W. The total Unit area would be approximately 8,436.83 acres of which 84.84% will be Federal and 15.16% will be New Mexico State leases. The leases with their legal descriptions are listed in Exhibits A and B. Since the working interests in each tract in the Unit are the same, it is proposed to include all of the Unit acreage in the initial Participating Area.

The purpose for creating this Unit is to allow for the prudent development of the multiple leases within the Unit allowing for current product prices. The Fruitland Coal wells within the Unit will share in a water and gas gathering system, compression, salt water disposal wells, and the construction of over 5 miles of pipeline to connect the Unit to the closest commercial gathering system.

Oil Conservation Division
Case No. 2 14876
Exhibit No. 2

Geology

The proposed Unit is bordered on the north and east by existing producing Fruitland Coal wells. The Da-Na-Zin Wilderness Area is to the west of the proposed Unit and the Fruitland Coal outcrops to the south of the proposed Unit. A Fruitland Coal Isopach map is attached as Exhibit C and a structure map, drawn on the top of the basal Fruitland Coal is attached as Exhibit D. The Fruitland Coal formation is present throughout the proposed Unit boundary.

There are two wells currently drilled on the proposed Unit acreage that penetrated the Fruitland Coal formation. They are the Woods 16 #1 (NW Section 16, T23N, R11W) and the Stewart 2 #1 (NW Section 2, T23N, R11W). A cross section of the open hole logs from these wells, along with a log just to the east, and another one to the northeast of the proposed Unit boundary are included in Exhibit E. The logs indicate that the Fruitland Coal is present across the entire Unit area but that the coal depth near the southern boundary is only 350' deep. Horizontal drilling in the coals, without fracing, may be more productive in the shallower parts of the proposed Unit.

Economics

There are currently 45 producing Fruitland Coal wells adjacent to the proposed PGA Unit (please refer to Exhibit F). Using a fixed \$4.00/MMBtu gas price and \$1,500/mo. lease operating cost, the gross ultimate reserves were calculated for each well using a decline curve analysis. Many of the wells are only a few years old and the monthly production rate is still inclining. For those cases the production rate was held constant for one year, then allowed to decline at a rate of 15%/yr. The gross ultimate reserves are listed on Exhibit F. There is quite a large difference in the reserves between the Coleman Operated wells and the Dugan Operated wells probably due to operating conditions. The average gross ultimate reserves are 360,600 MCF per well.

It is anticipated that each well will cost \$100,000 to drill, \$100,000 to complete, and require \$50,000 for surface production facilities. Also, each well will contribute a half mile of water and gas gathering lines at approximately \$30/ft. (\$79,200). Based on one well on each 160 acre tract, there are a potential of 51 wells in the Unit. Assuming 100 BWPD/well, two Entrada SWD wells will be required for full development at \$1,000,000 apiece. Also the closest Enterprise gathering line is 5 miles away and the cost to construct a trunk line from the Unit to their line is estimated to cost \$1,000,000. Each Unit well will incur an additional \$58,800 for these common facilities (\$3,000,000/51 wells).

On a per well basis the development cost will be \$388,000 (\$100,000 + \$100,000 + \$50,000 + \$79,200 + \$58,800). The Juniper West 13 #42 has calculated ultimate reserves (377,700 MCF) close to the average for all of the offset Fruitland Coal wells. The rate – time graph for this well is attached as Exhibit G. Using the production from the Juniper West 13 #42 as a model and \$388,000 as an investment, with a fixed gas price of \$4.00/MMBtu, the well will have a Net Present Value discounted at 10% of \$167,973. The payout period would be approximately 31 months with an acceptable pre-tax rate of return of 27.39%. Please refer to Exhibit H. If the gas price is only \$3.00/MMBtu the project has an unsatisfactory rate of return of only 7.23%. Please refer to Exhibit I.

Plan of Development

The San Juan Basin gas price is currently only about \$2.25/MMBtu (3/20/12). At this price the entire project is uneconomical. However, futures prices indicate that gas prices will be above \$3.00/MMBtu in 2013 and possibly into the \$4.00/MMBtu range by 2014. For this reason it is proposed to do minimal development until gas prices improve. In order to prove that a Unit well would be capable of production in paying quantities the first two wells drilled in the Unit will be cored and desorption tests will be completed so a gas in place number can be calculated. These data, along with the open hole logs and the similarities to the offset production will verify the economics and geologic continuity of the proposed PGA Unit.

The first two wells are proposed to be drilled before December 2012. The proposed locations are

NE/4 Section 3, T23N, R11W and SE/4 Section 35, T24N, R11W.

It is proposed to continue drilling and logging one well per year until the gas market improves. The proposed locations for the subsequent years are as follows:

SE/4 Section 2, T23N R11W

NW/4 Section 25, T24N, R11W

SW/4 Section 22, T24N, R11W.

Please refer to Exhibit J for the location of the proposed wells on the Unit Area map.

Of course, if the gas market improves the development schedule will be accelerated with full development, including the drilling of the two SWD wells and constructing the trunk line, over a three year period.