DOE/MC/26026--11

**A Novel Geotechnical/Geostatistical Approach for
Exploration and Production of Natural Gas From Multiple
Geologic Strata**

**Topical Report
October - December 1997**

**By
Ronald G. Brunk**

Work Performed Under Contract No.: DE-AC21-89MC26026

For
U.S. Department of Energy
Office of Fossil Energy
Federal Energy Technology Center
P.O. Box 880
Morgantown, West Virginia 26507-0880

RECEIVED
JUN 18 1998
OSTI

By
The College of West Virginia
P. O. Box AG
Beckley, West Virginia 25802-2839

MASTER *man*

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

**Portions of this document may be illegible
electronic image products. Images are
produced from the best available original
document.**

I. PROGRESS AND ACHIEVEMENTS

A. SUMMARY OF TASK ACTIVITIES

12.0 DEWATERING/PRODUCTION EXTENSION TEST PERIOD

OCTOBER

Total gas production for the CWV system averaged 55 mcf per day on the rotary master meter and 59 on the orifice meter. The compressor was down for at least 4 days due to Columbia line problems.

TW1 averaged 44.7 mcf per day from the Big Lime/Ravencliff formations and 10 mcf from the coals. Fluid pump system had no down days during the month. Water production from the coals averaged 16.5 bbls per day.

TW2 averaged 13.2 mcf per day. TW3 averaged 9.9 mcf per day from the Pocahontas Coal. TW4 averaged only 2 mcf per day. TW3 made an average of 7.4 barrels of water per day. All 3 of these wells were shut in from the 21st through the 24th of the month due to gathering line being unintentionally cut by a logging company in the area.

A meeting was conducted at Flatwoods, WV, to discuss the Project Final Report and Video Presentation. Attending were Ron Brunk, Dave Locke and Bill Overbey. Project reports, logs, production data and other information was delivered to the BDM personnel for use on the Final Report. Objectives and ideas for a video script were also discussed.

New CWV facilities, the library and the dormitory, were placed on line with Mountaineer Gas Company service. Necessary documents were prepared to allow these new facilities to be supplied by the Project's natural gas production.

A draft version of the Project Video Presentation was prepared and three CWV meetings were conducted in October to review the process. Timelines were also prepared for all phases of the work. The well sites were visited by Ron Brunk, Jim Owston and Donnie Turner and video was recorded on site for use in the Project Video.

Road dressing work was completed on all well roads which included road cleanup, brush clearing, culvert installation, gate repair and other activities. The work was performed by Ronald McGinnis Dozer Services October 14 - 17, 1997.

A logging crew working in the Sandlick area unintentionally cut into CWV's gathering line about 0.5 mile south of TW2 and TW4 wells. The line was tied back for safety, and was quickly repaired within 2 days by Moles Dozer personnel and Smokey Stover. Payment for the repairs was paid by the logging company.

NOVEMBER

Total CWV gas production averaged 54.6 on the rotary master meter and 53.8 on the orifice meter. The compressor was down 3 days due to high line pressure. The reason for the high discharge pressure was unknown.

TW1 averaged 38.1 mcf from the deep zones and 9.8 from the coals. Water production from the coals dropped to 13 bbls per day. The pump system was operational throughout the month.

TW2 gas production averaged 9.5 mcf per day. TW3 averaged 10.9 mcf. Water production from TW3 fell to only 5.1 barrels per day, and the pump was operational throughout the month. TW4 averaged only 1.4 mcf per day.

CWV prepared a Proposal for a multi-faceted implementation of Task 9 of Phase II of the Project. This Proposal included three separate subtasks focusing on separate spheres of coalbed methane activity. The subtasks involved (1) CBM recovery from an active mine with power generation; (2) reworking and stimulation of coals in existing conventional gas wells; and (3) storage of methane in an abandoned coal mine.

Talks continued with Eastern States Energy Company throughout the quarter. Eastern continues to express strong interest in reworking old conventional gas wells which are either still producing or else or abandoned. They are interested in recompletion of conventional wells to allow production from coal seams.

Discussions continued with Anker Energy for degassification activity near their Baybeck mine in Raleigh County. Anker released some details of their plans to drill into gob areas of the Baybeck mine. CWV hopes to be involved in this work and to monitor the results of the production of the gob.

Linda Hawkins, Brad Wartella, and Ron Brunk attended the Coalbed Methane Conference at Lakeview Resort in Morgantown November 6, 7. Several vital meetings were held there with DOE representatives, Anker Energy and Eastern States Energy Co.

DECEMBER

Total CWV gas production averaged 62.6 mcf on the rotary master meter and 57.7 on the orifice meter. The compressor was operational throughout the month.

TW1 averaged 37.5 mcf from the deep zones and 9.9 mcf from the coals. Water production from the coals averaged 13.6 bbls per day. The pump system was fully operational during the month.

TW2 averaged 5.3 mcf. TW3 averaged 12.5 mcf from the coals. The pump was fully operational and the well made an average of 7.3 barrels per day. TW4 averaged 1.4 mcf from the coals..

Work continued during the month on the Final Report. The original draft of the report, created in 1994, is being fully reviewed, revised and corrected as necessary. A vast array of details are being addressed in order to bring the finished up to industry standards and to create a comprehensive and informative document.

Considerable work was performed on implementation of Task 9. Talks were held with Anker Energy and Lloyd English to identify an acceptable work plan for degassification at Anker's Baybeck mine. The resulting work plan will provide for a gob well to drilled into a gob area of the active mine. The well will be 600 feet deep, accessing the Beckley coal 5 feet thick. This activity will allow for the study of the potential for capture and commercial use of the coal mine methane, and will provide valuable research opportunities. Monitoring of the well and gas flow will be conducted for a minimum of six months.

The normal project-related reports and documents were also completed during the quarter. These included Mountaineer nominations, Columbia nominations, WV Production Rate Treatment Packages for Mountaineer, chart integration packages for NESC Williams, Tax/Royalty Worksheets, CWV Gas Tracking Worksheets, field chart production calculations and County Assessor Tax Reports.

13.0 DEMONSTRATE NEWLY DEVELOPED TECHNOLOGIES FOR MULTI
STRATA GAS AND WATER PRODUCTION TO ENHANCE COMMERCIAL
APPLICATION

The process of converting brine wastewater into potable water and commercial salt continued successfully at the Morcinek Mine in Upper Silesia, Poland.

B. MEETINGS AND TRIPS

Oct 7 -- Final Report and Video meeting in Flatwoods

Oct 17 -- Site meeting for Video Presentation

Nov 6,7 -- Coalbed Methane Forum in Morgantown

II. PLANNED ACTIVITIES

- > Complete Project Final Report
- > Create Project Video Presentation
- > Implement Task 9