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ABSTRACT

The Pennsylvania State University, under contract to the U.S. Department of Energy, National Energy Technology Laboratory will establish, promote, and manage a national industry-driven Stripper Well Consortium (SWC) that will be focused on improving the production performance of domestic petroleum and/or natural gas stripper wells. The consortium creates a partnership with the U.S. petroleum and natural gas industries and trade associations, state funding agencies, academia, and the National Energy Technology Laboratory.

This report serves as the sixth quarterly technical progress report for the SWC. Key activities for this reporting period included:

- Organized and hosted two technology transfer meetings,
- Collaborated with the Pennsylvania Oil and Gas Association (POGAM) to host a Natural Gas Outlook conference in Pittsburgh, PA,
- Provided a SWC presentation at the Interstate Oil and Gas Compact Commission (IOGCC) meeting in Jackson Hole, WY, and
- Completed and released a stripper well industry documentary entitled “: Independent Oil: Rediscovering America’s Forgotten Wells”.

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1.0 INTRODUCTION

The Pennsylvania State University, under contract to the U.S. Department of Energy (DOE), National Energy Technology Laboratory (NETL), is in the process of establishing an industry-driven stripper well consortium that will be focused on improving the production performance of domestic petroleum and/or natural gas stripper wells. Industry-driven consortia provide a cost-efficient vehicle for developing, transferring, and deploying new technologies into the private sector. The Stripper Well Consortium (SWC) will create a partnership with the U.S. petroleum and natural gas industries and trade associations, state funding agencies, academia, the National Energy Technology Laboratory, and the National Petroleum Technology Office.

Consortium technology development research will be conducted in the areas of reservoir remediation, wellbore clean up, and surface system optimization. Consortium members elected an Executive Council that will be charged with reviewing projects for consortium co-funding. Proposals must address improving the production performance of stripper wells and must provide significant cost share. The process of having industry develop, review, and select projects for funding will ensure that the consortium conducts research that is relevant and timely to industry. Co-funding of projects using external sources of funding will be sought to ensure that consortium funds are highly leveraged.

2.0 EXPERIMENTAL

A description of experimental methods is required by the DOE for all quarterly technical progress reports. In this program, Penn State is responsible for establishing and managing an industry-driven stripper well consortium. Technology development research awards are made on a competitive basis. Therefore, this section is not applicable to the Penn State contracted activities. Technical reports from the individual researchers will be required to contain an experimental discussion section and will be submitted to consortium members and DOE for their review.

3.0 RESULTS AND DISCUSSION

Key activities for this reporting period included:

- Organized and hosted two technology transfer meetings,
- Collaborated with the Pennsylvania Oil and Gas Association (POGAM) to host a Natural Gas Outlook conference in Pittsburgh, PA,
- Provided a SWC presentation at the Interstate Oil and Gas Compact Commission (IOGCC) meeting in Jackson Hole, WY, and
- Completed and released a stripper well industry documentary entitled “: Independent Oil: Rediscovering America’s Forgotten Wells”.

3.1 Technology Transfer Meetings

Two technology transfer meetings were held during this reporting period. These meetings are summarized below.

Warren, Pennsylvania. The SWC held its Northeast Technology Transfer meeting on October 18, 2005 at the Conewango Club in Warren PA. The meeting drew 32 attendees from across the region. The meeting agenda is provided in Appendix A.

Midland, Texas. The SWC held its Southwest Technology Transfer meeting on October 27, 2005 at the Hilton Midland Plaza in Midland, Texas. The meeting drew 37 attendees from across the region. The meeting agenda is provided in Appendix B.

3.2 POGAM Natural Outlook Conference

The SWC collaborated with the Pennsylvania Oil and Gas Association (POGAM) to host the Natural Gas Outlook conference in Pittsburgh, PA on September 14, 2005. The conference brought together natural gas producers, storage operators, and end users to discuss natural gas production and availability issues. The meeting drew approximately 100 attendees. The SWC

organized and staffed an exhibit on the SWC and debuted the Independent Oil: Rediscovering American's Forgotten Wells public documentary.

3.3 IOGCC Presentation

The Interstate and Oil Compact Commission (IOGCC) invited the SWC to attend and present an overview of the SWC at their annual meeting in Jackson Hole, WY on September 17-20, 2005. The presentation was entitled: Industry-Driven Technology Development for Stripper Wells.

3.4 Independent Oil: Rediscovering America's Forgotten Wells

The public documentary on the U.S. stripper well industry entitled: "Independent Oil: Rediscovering American's Forgotten Wells" was completed and distributed during this reporting period. A total of 3,500 copies of the documentary were produced on a DVD format. Penn State's Public Broadcast (WPSU) who will schedule the documentary to be aired in 2006 produced the educational documentary. In addition to the planned WPSU broadcast, numerous SWC members have started to distribute the DVD in local schools and civic groups.

3.5 Upcoming Activities

During the next quarter the SWC will:

- Finalize and release its 2006 request for proposals,
- Finalize its 2006 meeting calendar, and
- Continue to build its membership base.

4.0 CONCLUSIONS

The SWC continues to participate in industry related conferences to increase awareness of the SWC and membership. The SWC has laid a solid foundation for technology development and membership growth for the upcoming year.

5.0 REFERENCES

A listing of referenced materials is required by the DOE for each quarterly technical progress report. This technical progress report for the SWC did not utilize any reference material.

6.0 APPENDICES

The agendas for the Warren and Midland technology transfer meetings are provided in Appendix A and B, respectively.

Appendix A: Agenda for Warren, PA Technology Transfer Meeting



MEETING AGENDA

Conewango Club * Warren, Pennsylvania

| | |
|-------------------------|---|
| October 17, 2005 | |
| 6:00 - 8:00 | <u>Welcome Reception (Holiday Inn Warren)</u> |
| October 18, 2005 | |
| 7:30 - 8:30 | <u>Buffet Breakfast and Meeting Registration</u> |
| 8:30 - 8:45 | Opening Comments |
| 8:45 - 10:15 | Panel 1 |
| | <p>Design, Construction and Evaluation of an Accurate, Low-Cost, Portable Production Well Tester <i>Presenter: Ken Oglesby, Oak Resources, Inc.</i></p> <p>Hydraulic Fracture Imaging <i>Presenter: Roger Willis, Universal Well Services</i></p> <p>Building and Testing a New Type of Compressor for Stripper Well Production Application <i>Presenter: Paul Weatherbee, W & W Vacuum</i></p> |
| 10:15 - 10:30 | Break |
| 10:30 - 12:00 | Panel 2 |
| | <p>Demonstration of Hydroslotter Technology on New York Stripper Wells <i>Presenter: Lewis Taylor, Hydroslotter Corporation</i></p> <p>A Study to Evaluate the Effect of Completion and Production Procedures on the Ultimate Recoverable Reserves from Knox Formation Wells: Rose Run Sandstone and Beekmantown Dolomite <i>Presenter: Timothy Knobloch, James Engineering</i></p> <p>Control of Water Production Using Disproportionate Permeability Reduction in Gelled Polymer Systems <i>Presenter: Rich Pancake, University of Kansas</i></p> |
| 12:00 - 1:00 | Lunch |

| | |
|-------------|--|
| 1:00 - 2:30 | Panel 3 |
| | Interaction of Nitrogen/ CO₂ Mixtures with Crude Oil <i>Presenter: Robert W. Watson, The Pennsylvania State University</i> Re-fit Two Stripper Wells with Existing Large Diameter or Open Hole Completions with Spoolable Non-Metallic Tubing, Transition Connections, Variable Diameter Seal Cups and Modified G.O.A.L. Casing Swab to Automatically Lift Fluids and Enhance Performance <i>Presenter: Gerald Swoyer, Brandywine Energy and Development Company, Inc.</i> |
| 2:30 – 3:30 | Group Discussion: SWC Review |
| 3:30 - 4:15 | SWC DVD Presentation “Independent Oil Rediscovering America’s Forgotten Wells” |

Appendix B: Agenda for Midland, TX Technology Transfer Meeting



MEETING AGENDA
Hilton Midland Plaza * Midland, Texas

October 26, 2005

| | |
|-------------|---|
| 6:00–8:00PM | <u>Welcome Reception (Hilton Midland Plaza)</u> |
|-------------|---|

October 27, 2005

| | |
|---------------|---|
| 7:30–8:30AM | <u>Buffet Breakfast (Civic Room) and Meeting Registration (Civic Room)</u> |
| 8:30 – 8:45 | Opening Comments |
| 8:45 – 10:15 | <p>Panel 1</p> <p>Design, Construction and Evaluation of an Accurate, Low-Cost, Portable Production Well Tester <i>Presenter: Ken Oglesby, Oak Resources, Inc.</i></p> <p>Advanced Technology for Infill and Recompletion Candidate Well Selection <i>Presenter: Walt Ayers & Yueming Cheng, Texas A&M University</i></p> <p>Building and Testing a New Type of Compressor for Stripper Well Production Application <i>Presenter: Paul Weatherbee, W&W Vacuum & Compressors, Inc.</i></p> |
| 10:15 – 10:30 | Break |
| 10:30 – 12:00 | <p>Panel 2</p> <p>Evaluating Casing Plunger Cup Design <i>Presenter: Windel Mayfield, PAAL, LLC</i></p> <p>Desalination of Brackish Water and Disposal into Waterflood Injection Wells <i>Presenter: David Burnett, Texas A&M University</i></p> |
| 12:00 – 1:00 | Lunch (Civic Room) |
| 1:00 – 2:30 | <p>Panel 3</p> <p>Real Time Remote Field Monitoring of Plunger Lift Wells to Reduce Production Down Time and Increase Natural Gas Production <i>Presenter: Paul Tubel, Tubel Technologies, Inc.</i></p> <p>Uncovering Bypassed Pay in Central Oklahoma Using Statistical Analysis and Field Tests <i>Presenter: Kathryn March, Schlumberger Consulting Services</i></p> <p>Interaction of Nitrogen/ CO₂ Mixtures with Crude Oil <i>Presenter: Robert W. Watson, The Pennsylvania State University</i></p> |

| | |
|--------------------|---|
| 2:30 - 3:30 | Group Discussion: SWC Review |
| 3:30 – 4:15 | SWC Public Broadcast: “Independent Oil Rediscovering America’s Forgotten Wells” |