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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 second quarterly technical progress report for the SWC. Key activities for this reporting period include: 1) exhibit and participate in the Society of Petroleum Engineers (SPE) Regional Meeting in Charleston WV, 2) host the SWC fall technology transfer meeting in Oklahoma City, OK and finalize the organization of the State College, PA fall Technology Transfer meeting, and 3) initiate the revision of the SWC By-laws.

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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 include: 1) exhibit and participate in the Society of Petroleum Engineers Regional Meeting in Charleston West Virginia, 2) finalize the organization of the two fall Technology Transfer meetings and 3) initiate revision of the SWC By-laws.

3.1 SPE Regional Meeting

The SWC participated and exhibited in the Society of Petroleum Engineers (SPE) regional meeting at Charleston, W.V. on September 15-17, 2004. The SPE meeting was host to many industry participants. The SWC focus at this meeting was to provide industry an overview of the technologies developed under the SWC and to recruit new members for the Consortium. The SWC developed and manned a nominal 10 x 10 foot exhibit booth during the two-day event.

3.2 Technology Transfer Meetings

The SWC will host two technology meetings in the fall of 2004.

Oklahoma City, Oklahoma Workshop. The first 2004 SWC technology transfer event was held in collaboration with the Oklahoma Marginal Well Commission (OMWC) 2004 Technology Trade Fair on October 26, 2004 in Oklahoma City, OK. The SWC was a co-sponsor of the event and organized 12 exhibit booths to showcase past and present SWC projects which included Advanced Resources, Inc., Brandywine Energy & Development Co., Colorado School of Mines, Composite Engineers, James Engineering, The Pennsylvania State University, Texas A&M, and Tubel Technologies. The SWC also invited the Rocky Mountain Oilfield Testing Center (RMOTC) to take part in the exhibit space to further promote their efforts with respect to the SWC Projects.

The 2004 Trade Expo dedicated a portion of the event to technological presentations. The SWC was responsible for 8 of the 9 scheduled technological presentations. The presentation schedule is included in Appendix A.

The event was host to over 1200 attendees from the oil and gas industry and drew 150 exhibitors. The Expo was an opportunity for SWC to meet face to face with both large and small oil and gas companies and to showcase the technologies developed under the SWC.

State College, Pennsylvania Workshop. The second technology transfer workshop will be held in State College, Pennsylvania at the Penn State Conference Center on November 16, 2004. The workshop is still in the planning stage.

3.3 Revision of SWC By-Laws

The SWC is revising its By-Laws to create a Supporting Membership tier which will allow companies that wish to submit proposals to the SWC the ability to engage the consortium at a reduced level of commitment. Under this scenario, companies pay a meeting registration fee which is due at the time of their proposal submission rather than applying for a Full membership. This scenario still will require the company to join the consortium to ensure they are aware and abide by the SWC governing principles – it's By-Laws.

4.0 CONCLUSIONS

The SWC is preparing for it's upcoming fall technology transfer meetings and is in the initial phase of revising its By-Laws. 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

APPENDIX A: 2004 TRADE EXPO PRESENTATIONS

2004 Trade Expo Presentations Agenda

October 26, 2004
10:00 a.m. to 3:00 p.m.

10:00 a.m. ***GAS OPERATED AUTOMATIC LIFT (GOAL) PETROPUMP***
Brandywine Energy & Development Co. has developed a gas operated automatic lift plunger lift tool to remove fluids from stripper wells. The system is unique in that it operates automatically using an on tool pressure activated valve pre set to retrieve and deliver a fixed volume of fluid each run and then automatically return to the well bore for additional fluid when required.

10:30 a.m. ***VORTEX FLOW TOOLS***
Vortex Flow, LLC has developed a revolutionary flow development chamber that takes a disorganized single or multiphase flow and transforms it to a spiral flow. The vortex created by this reduces the friction that causes pressure to drop as fluids flow through a pipe. Three different tools have been developed.

11:00 a.m. ***MWC PRESENTS: GAS PROCESSING CONTRACTS & NEGOTIATIONS***
Understanding the various types of processing agreements in today's gas markets. Steve Reese has been involved in the natural gas industry since 1981. Reese has handled regulatory filings with FERC, in-house expert testimony, strategy development for gas plant supply, and the writing of contracts, amendments and settlement agreements.

11:30 a.m. ***WEATHERBEE PUMP***
W & W Vacuum & Compressors, Inc. is developing a novel type of variable capacity compressor/pump for low productivity gas production operations. The pump has no wasted motion as two chambers are loading while two chambers are unloading. The pump has a capacity control mechanism which allows the flow rate of the device to be varied to meet increased or decreased demands without changing the rotation rate of the drive shaft.

12:00 p.m. ***CHEMICAL INJECTOR FOR PLUNGER LIFT GAS WELLS***
Composite Engineers, Inc. has developed a simple, economical chemical system that requires no special tools to install, no service rig and no downtime. The Plunger Conveyed Chemical System consists of a modified plunger identical to the one presently being used and a chemical chamber located on the top of the lubricator.

12:30 p.m. ***OILFIELD BRINE DESALINATION TRAILER***
Texas A&M University has developed a mobile produced brine desalination unit to test onsite the efficiency of produced brine cleanup. The unit tests the performance of key processes used to cleanup the brine and measures electrical power usage, a major cost factor of reverse osmosis desalination.

1:00 p.m. ***ENGINEERING DECISION TREE FORMS***
James Engineering, Inc. has developed a series of procedure guides using decision tree forms which can help operators improve production from their stripper wells. The first is a low cost methodology which analyzes and suggests corrective actions for stripper wells experiencing abnormal production decline. The second details cost effective fluid removal options and the third identifies cost effective corrosion mitigation procedures.

1:30 p.m. ***LOW COST REAL TIME DOWNHOLE WIRELESS GAUGE***
Tubel Technologies, Inc. has developed a new downhole wireless gauge that addresses the needs of the oil and gas producers for a simple system to automate and optimize the hydrocarbon production. The system eliminates cables, clamps and splices inside the wellbore increasing reliability, lowering costs and reducing significantly the time required for deployment of the completion system in the well.

2:00 p.m. ***INTERMITTENT GAS CHAMBER LIFT***
The Pennsylvania State University is developing a new production system for low volume oil and gas wells as an alternative to conventional lift systems such as rod pumping. The chamber lift process involves the injection of gas into the oil column via a small diameter tubing string that is set in the production tubing. The gas then displaces the accumulated fluid to the surface.

2:30 p.m. ***TO BE DETERMINED***