

President's Perspective
RPSEA Board Elects New Chair
Ultra-Deepwater Program Releases RFPs
2011 Ultra-Deepwater Technical Conference
Volunteers Needed to Review RFP Proposals
Welcome New RPSEA Members
Poster Sessions in RPSEA Booth
Fellowship/Scholarship Program Recipient Spotlight
HARC/RPSEA Workshop
Small Producer Project Highlight
Welcome RPSEA Team Members
Ultra-Deepwater Project Highlight
Unconventional Resources Project Highlight
Calendar of Events

President's Perspective

At the time of our last newsletter, the evaluation of the proposals for the 2010 Small Producer Program was essentially complete, and the review process for the Unconventional Resources Program was well under way. As those of you who submitted proposals have surely noticed, the time between the submission of the proposals and the announcement of awards has been much longer than any of us have anticipated or desired. While the selections for these programs have now been approved and all those submitting proposals have been notified of the status of their proposal, I would like to offer some explanation for the delay in the implementation of the 2010 program.

As you know, the Macando accident in the Gulf of Mexico along with public concerns over shale gas development in the Northeastern U.S. has caused the government to take an extensive look at the safety and environmental impact of both offshore and onshore oil and gas development operations. The Department of Energy (DOE) has been deeply involved in these activities, and the RPSEA R&D program is seen by DOE as a key component of their efforts to ensure safe and environmentally sustainable development of key domestic energy resources. RPSEA submitted a draft Annual Plan for 2011 to DOE in July of 2010. In order to ensure that the Annual Plan on which RPSEA's 2011 program will be based is fully aligned with DOE's approach to responsible domestic energy development, the development of an approved 2011 Annual Plan was delayed to allow various government information gathering and planning activities to occur. DOE also wanted to ensure that the selections for the 2010 program on which work would be initiated in 2011 were well aligned with the goals and objectives of the government's approach to energy development. Accordingly, the 2010 Ultra-Deepwater RFPs were delayed, along with final approval of the Unconventional Resources and Small Producer selections.

As a result of the work that has been done to develop a government strategy for assuring the safe and responsible development of our nation's energy resources, we believe that we are on track with a program that is consistent with that strategy and worthy of support by both government and industry. The 2011 Annual Plan should be released shortly by DOE, the Ultra-Deepwater RFP and proposal evaluation process is in progress, and the 2010 Unconventional Resources and Small Producer selections will be announced shortly on RPSEA's website. RPSEA has been directed to prepare a draft Annual Plan for the years 2012-2014, which will be due in November. We look forward to working with all of you to develop and execute a continuing program to ensure that the technology is available to develop the Unconventional and Ultra-Deepwater resources, which are crucial to the energy supply of our nation and the world.



Bob Siegfried
President

[Back to Table of Contents](#)

RPSEA Board Elects New Chair

The RPSEA Board of Directors elected John P. Warren, Jr., Legal Area Manager at Petrobras America, Inc., as the Board of Directors Chair effective June 30, 2011. Warren succeeds Dr. Stephen A. Holditch, head of the Harold Vance Department of Petroleum Engineering at Texas A&M University, who completed a two-year term. The organizational bylaws stipulate that the chair position alternate between industry and academia every two years.

On the newly elected chair, RPSEA President Dr. Robert W. Siegfried II commented "John Warren has been involved with RPSEA since the early days, when his legal expertise was freely given to help us ensure that we had governance documents that reflected the unique partnership envisioned by the founding members of RPSEA. He has been a valuable member of the RPSEA Board, and we welcome his leadership as we move forward. We also wish to express our gratitude for the capable leadership of Dr. Steve Holditch of Texas A&M University over the last two years. Steve is a visionary leader within the oil and gas technology community. RPSEA has benefitted greatly from his leadership over the last two years, and we look forward to his continued participation as a member of the Board of Directors."



Warren is responsible for legal matters related to upstream, downstream, procurement, litigation and other corporate activities. He is also responsible for corporate governance and compliance and its subsidiaries. As part of his upstream responsibilities, he advises on various aspects of work in the Gulf of Mexico, including deep water and ultra-deepwater exploration and production. Prior to joining Petrobras America, Inc., Warren was responsible for research commercialization at the University of Houston System, where he was part of the original team that helped establish RPSEA and specifically the policies related to intellectual property and procurement.

"We have learned during the past year that we face many technical challenges in the ultra-deepwater environment and in developing our natural gas and oil in unconventional resources," Warren said. "RPSEA has the organization and membership to objectively address many of these issues through our public/private partnership. RPSEA effectively brings together the best talents in a large group of industry, technical institutes, laboratories, universities and government to address some of the more basic research challenges in an effort to improve the efficiency and safety of extracting the energy we need for the future. This is an opportunity for me to help move this essential task forward for the long-term energy health of our nation."

Please join RPSEA in extending our appreciation to outgoing Board Chair Dr. Steve Holditch for his contributions the past two years and congratulating John Warren on the position!

[Back to Table of Contents](#)

Ultra-Deepwater Program Releases RFPs

Recently, RPSEA released six 2010 Ultra-Deepwater requests for proposals (RFPs) of which two are currently open. The last two RFPs will close on July 18.

The Ultra-Deepwater Program RFP process, which differs from the other two RPSEA programs releases multiple RFPs instead of just one. The UDW RFPs represented the following focus areas:

1. Continued work in current projects
2. Drilling, completion and intervention breakthroughs
3. Significantly extending subsea tieback distances and surface host elimination
4. Dry trees - direct well intervention and risers in 10,000 fwd
5. Associated safety and environmental concerns
6. Appraisal and development geosciences and reservoir engineering

You can find the most current RFP information on the [Current Request for Proposals page](#) under the Business with RPSEA menu button on RPSEA's website. The 2011 RFPs for all programs are targeted to be released later this year.

2011 Ultra-Deepwater Technical Conference

[Back to Table of Contents](#)

The RPSEA 2011 Ultra-Deepwater Technical Conference, a two-day conference, is set for July 26-27, 2011, at the Lone Star Corporate College in The Woodlands, Texas.

The conference will focus on new technology development and research from 29 RPSEA-funded ultra-deepwater research projects. The highlighted technologies will include safety procedures, measurements, damage identification and remediation of corrosion and blockage in flowlines using autonomous remote control vehicles and advanced telemetry. New information will be presented on reservoirs and wellbores based on seismic and advanced geophysical applications.

This conference is combining all nine of RPSEA's Ultra-Deepwater Technical Advisory Committees (TACs), who serve in an advisory role to RPSEA's Ultra-Deepwater Program. The role of the TACs is to identify current technology gaps and define the specific R&D efforts needed to address these gaps. Those that serve on the TACs are subject matter experts, who study and apply ultra-deepwater technologies in real field situations. The TACs provide a bottom-up, end-user-driven program. The nine TACs are: Geosciences; Flow Assurance; Subsea Systems; Floating Facilities and Risers; Drilling, Completions and Intervention; Reservoir Engineering; Systems Engineering; Metocean; and, Environmental, Safety and Regulatory.

RPSEA's Vice President of Ultra-Deepwater James Pappas will discuss the state of RPSEA. Former RPSEA Board Chair Dr. Stephen Holditch with Texas A&M University will give a strategic view of where the RPSEA Ultra-Deepwater Program is going in the future.

Keynote speakers will include Christopher Smith, Deputy Assistant U.S. Secretary of Energy, Kevin Brady, Congressman from Texas' 8th Congressional District and Randy Kubota, Wild Well Control General Manager: Engineering.

Cost for the conference is \$100 for RPSEA members and \$500 for non-RPSEA members. To register and for more information, click [UDW](#).

[Back to Table of Contents](#)

Volunteers Needed to Review RFP Proposals

One of the most important ways in which RPSEA members can engage with and provide direction to RPSEA's three programs is through providing technical reviews of proposals submitted to the program through RPSEA's annual requests for proposals. RPSEA is seeking reviewers that are qualified and willing to participate in the technical review process. When there is an opportunity to review proposals, you will be contacted with information regarding the proposals, review schedule and other pertinent information, so that you may decide whether you are able to participate.

In the Unconventional Resources and Small Producers Programs, RPSEA is seeking reviewers in the areas of Drilling, Stimulation and Completion, Water Management, Environmental, Reservoir Description and Management, Reservoir Engineering, Exploration Technologies and Project Integration.

In the Ultra-Deepwater Program, RPSEA is seeking reviewers in the areas of Drilling, Completion and Intervention Breakthroughs; Significantly Extending Subsea Tieback Distances and Surface Host Elimination; Dry Trees - Direct Well Intervention and Risers in 10,000 fwd; Associated Safety and Environmental Concerns; and, Appraisal and Development Geosciences and Reservoir Engineering.

If you are interested in volunteering, please contact Director of Corporate Affairs Steve Beach at sbeach@rpsea.org.

Welcome New RPSEA Members

[Back to Table of Contents](#)

RPSEA is proud of its membership base that has grown to more than 170 members in five years. Being a quarterly, two-step process, membership is approved first internally through RPSEA and then by the Secretary of Energy. The Secretary has approved nine new organizations for RPSEA membership for this quarter, and those organizations are listed below.

3D at Depth, LLC, Colorado
Consultate LLC, Texas
DOF Subsea USA, Texas
Hamilton Group, Texas
Hogan Lovells US LLP, District of Columbia
Octave Reservoir Technologies, Texas
Oklahoma State University, Oklahoma
Radoil, Inc., Texas
Water Standard, Texas

RPSEA welcomes each of these organizations and is proud to be affiliated with each one. Please join us in welcoming them to RPSEA! Click here to view a list of all [RPSEA members](#).

[Back to Table of Contents](#)

Poster Sessions in RPSEA Booth

RPSEA exhibits at various industry events throughout the year, and at a select few, RPSEA invites the Principal Investigators for RPSEA-sponsored projects to exhibit posters in RPSEA's booth. Remaining opportunities this year to participate in a poster session are the SEG International Exposition and 81st Annual Meeting in San Antonio, Texas in September and the 2011 SPE Annual Technical Conference & Exhibition in Denver, Colorado in November.

If you would like to hold a poster session during one of these events, please contact Director of Corporate Affairs Steve Beach at sbeach@rpsea.org. The spots are filled on a first come, first serve basis.

[Back to Table of Contents](#)

Fellowship/Scholarship Program Recipient Spotlight

RPSEA created the Fellowship/Scholarship Program to establish long-term, industry/education partnerships. RPSEA members Schlumberger and Strata Production Company designate financial resources through RPSEA to award multiple scholarships to the following member universities: Colorado School of Mines, Louisiana State University, New Mexico Institute of Mining and Technology, Stanford University, Texas A&M University, The University of Texas at Austin, The University of Oklahoma and West Virginia University. The most promising students with studies relevant to the oil and gas industry are awarded fellowships to help with their education and/or research activities. Through private funding from these two members, \$240,000 is established for these member universities to provide much needed support for 16 students per year for three years.



The University of Oklahoma student Emily Dixon was awarded a scholarship through the Fellowship/Scholarship Program for the 2010-11 school year. RPSEA spotlights Dixon this quarter in the following interview, while wishing her success in completing her degree.

1. What is your degree and major? I'm a senior in Geology at The University of Oklahoma.

2. How have you grown both personally and professionally from your scholarship with RPSEA? During my time as an undergraduate I have worked as a lab assistant in a paleomagnetic lab where I used a magnetometer to measure the orientation of iron particles in a core sample. I also had a summer internship at Marshall Space Flight Center where I plotted shape data of lunar simulant using the command-line driven program gnuplot.

3. What are you doing today? After I graduate, I am planning to attend graduate school and to earn a Master's degree and possibly a PhD in geology related to structural geology or planetary geology. I hope to one day work for or with NASA as a research scientist.

[Back to Table of Contents](#)

HARC/RPSEA Project Workshop

RPSEA member the Houston Advanced Research Center is hosting a RPSEA Project Workshop - Focusing on Environmental Issues Associated with Unconventional Natural Gas Operations on August 18 at their facility in The Woodlands, Texas.

The overall objective of the workshop is to gather and develop information that may be used in the development of RPSEA's annual research plan. The mission of RPSEA's Unconventional Resources Program is to identify and develop economically viable technologies to locate, characterize and produce unconventional natural gas and other petroleum resources in an environmentally acceptable manner. After a series of talks on various perspectives concerning environmental, health and safety issues, there will be three discussion sessions. These sessions are designed to discuss potential research ideas in a nonproprietary, unrestricted manner.

For more information and to register, click [HARC](#). The registration deadline is August 11.

[Back to Table of Contents](#)

Small Producer Project Highlight

Field Site Testing of Low Impact Oil Field Access Roads: Reducing the Footprint in Desert Ecosystems, Project 07123-01

Principal Investigator: David Burnett, Texas A&M University

Partners: Rio Vista Bluff Ranch & Halliburton Energy Services

Texas A&M University is focusing on minimal impact O&G lease roads and testing their effectiveness in reducing the environmental footprint of field development in sensitive desert ecosystems.

On March 21, 2011 at SPE Americas E&P, HSSE Conference SPE paper, 142139, reporting on this research, was presented. Authors of the paper are Burnett, D. B., Texas A&M University, McDowell, J., Newpark Resources, Scott, J. B., Scott Environmental, and Dolan C. University of Wyoming

Abstract of SPE 142139

Lease roads and well pads are a highly visible and often less than welcomed aspect of O&G drilling and producing operations. In South Texas, this is occurring as the Cretaceous Eagle Ford shale is being developed from near the Mexican border outward to the East/Northeast across several counties stretching more than 150 miles. The "Brush Country," as it is often referred to, is a semi-arid landscape where measures to lessen the impact of developing the shale are fostering a host of new technologies.

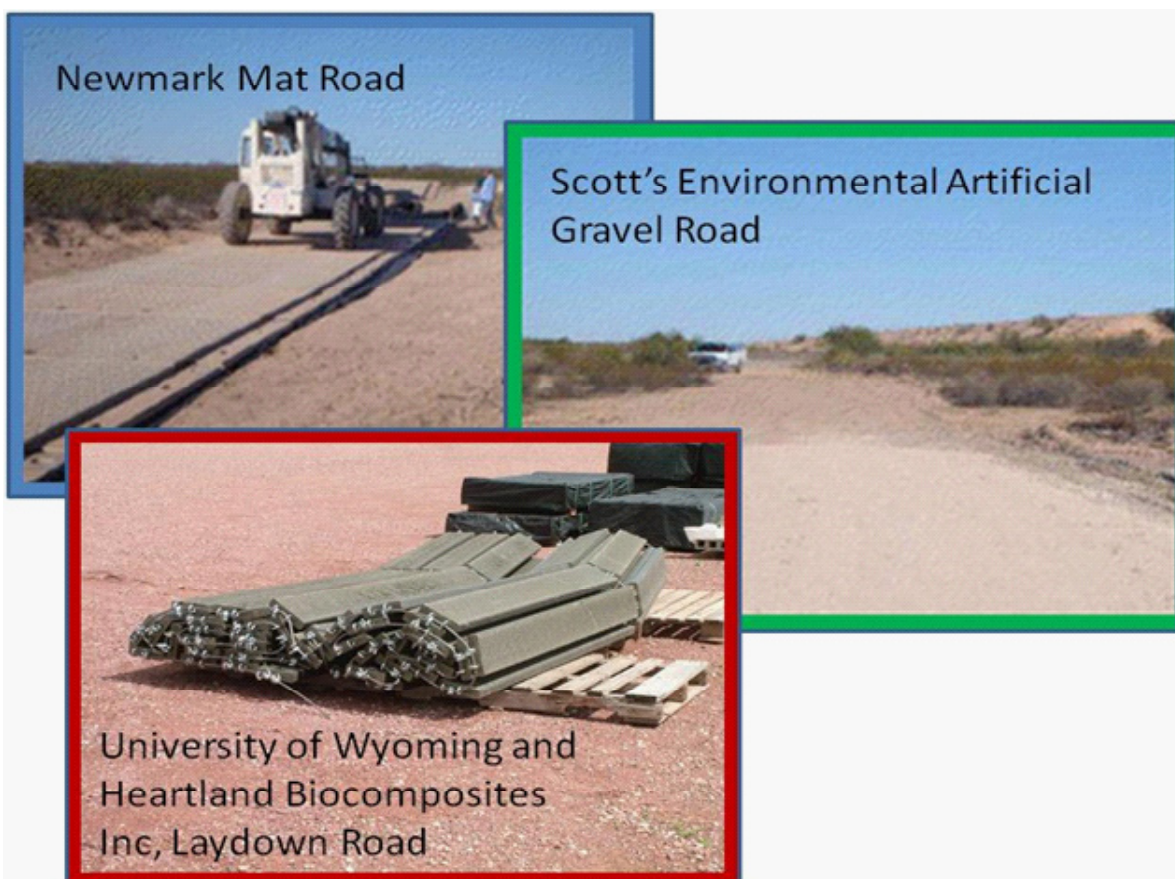
To address environmental concerns about the development of the resource, Texas A&M University is adapting "Disappearing Roads" technology to the particular needs of the Eagle Ford. It is a collaborative project within the Environmentally Friendly Drilling Program, which has been testing new types of "disappearing roads" in a desert-like environment to measure their effectiveness and ability to lower the surface footprint of surface operations. One road was constructed with materials made with recycled drilling waste, another incorporated reusable composite mats and a third represented a new type of "roll out road" developed by a student engineering team from the University of Wyoming as a class project.

The field demonstration is expected to:

1) Provide a realistic field trial in representative desert ecosystems, so that results could be evaluated efficiently so as to benefit both the industry, the organizations with the technology and the public sector.

2) Document and provide the results of technology field trials so that promising processes, systems and products could be utilized in a wider range of gas shale plays.

3) Speed the commercial development of technology developed to reduce the environmental footprint of drilling activities.



The removable mat concepts may also be used to lessen the impact of constructing water ponds and to provide temporary enlargement of well pads that can accommodate service equipment used in fracturing operations. This paper will describe the technology behind the roads and document their performance in semi-arid rangeland landscapes.

[Back to Table of Contents](#)

Welcome RPSEA Team Members

RPSEA is happy to announce two new team members who have joined us this year. Pat Jarquesy and Debbie Beach are names some of you may be familiar with at RPSEA.

Patricia "Pat" Jarquesy brings fifteen plus years of management experience in government and commercial contracting to RPSEA. Her extensive experience in contract management comes from her tenure in the aerospace industry. Her tours of duty in government contracting included a contract management positions with Lockheed Martin's Engineering & Sciences Contract, Boeing's Flight Equipment Processing Contract and the United Space Alliance, Space Program Operations Contract. Additionally, Pat was also the Manager of Process, Performance and Control for the Flight Crew Equipment Program. Pat graduated Cum Laude from the University of Houston with a bachelor's degree in Management. She has completed Lean Six Sigma Green Belt training and is a long time member of the National Contract Management Association. She will assist Wiley Wells in contracts as the Subcontracts Manager.



While Debra "Debbie" Beach has most recently worked in the mortgage industry in office management and human resources, she has over 10+ years experience in the oil and gas industry, working for Ryder Scott, HJ Gruy & Associates and Fluor Enterprises. She recently joined RPSEA as a full time employee, but Debbie has assisted RPSEA for more than four years as a consultant helping with office start-up to website design. Her strong work ethic, knowledge of RPSEA and ability to "get the job done" are qualities well matched to her position as Documentation Specialist. She will be assisting Wiley Wells with invoicing, project deliverables and process improvements.



Please join us in welcoming both to RPSEA.

[Back to Table of Contents](#)

Ultra-Deepwater Project Highlight

Improved Recovery, Project 07121-1701

Principal Investigator: Dave Rees and Joe Lach, Knowledge Reservoir LLC

Partners: Louisiana State University & Anadarko Petroleum Corporation

Following are conclusions on the potential for improved recovery in deepwater Gulf of Mexico fields:

1. For IOR considerations, the deepwater Gulf of Mexico fields and reservoirs are divided into two age groups due to significant property and drive energy differences: Neogene: Miocene, Pliocene, and Pleistocene age reservoirs; and Paleogene: Oligocene, Eocene, Paleocene.
2. Oil recovery in Neogene reservoirs ranges from 16% - 32% - 48% (P90-P50-P10). These statistics exclude reservoirs with water injection. However, when waterflooded reservoirs are included, the statistics are unchanged due to limited historical water injection.
3. There is a large target for improved recovery in the Neogene because (1) average oil recovery is modest at 32% and the projected ROIP in discovered fields is 21 billion bbl, (2) many reservoirs have only moderate natural drive energy from rock compaction and aquifer influx, and (3) only a limited number of reservoirs have high recovery >50% from strong aquifer drive or engineered waterflooding.
4. The primary risks of implementing IOR projects in Neogene reservoirs are:
 - a. Average reservoir OOIP is small at ~ 50 MMSTB which combined with the high costs of deepwater operations creates challenging economics.
 - b. Reservoirs are deep and geologically complex (structural and depositional), and the seismic image is typically of low resolution. This has led to a poor track record of predicting performance and has elevated the risk profile for all incremental projects.
 - c. The high cost of wells.
5. The most promising IOR concepts for Neogene are:
 - a. Adding reservoir energy by injecting water or gas. Water injection is most favorable due to the robust gas sales infrastructure.
 - b. There is a need for a low-cost alternative for water injection. The most favorable alternatives are seafloor water injection and aquifer dump flooding.
 - c. Subsea boosting and artificial lift are key IOR technologies for primary production optimization and enhancing secondary recovery permitting flow to higher water cut.
 - d. Nitrogen is a good alternative for adding reservoir energy and with tertiary recovery benefits since it would be miscible in many reservoirs. There are many operational benefits for using inert nitrogen gas. The potential drawback is that asphaltenes can be more unstable in the presence of the gas.
 - e. Injection of low-salinity water is an emerging technology which can add tertiary recovery benefits to a waterflood by reducing residual oil saturation (Sor). Nano-filtration membrane technology has advanced rapidly for offshore sulfate reduction plants and is quickly becoming an industry standard for waterflood projects (deepwater Angola and Ursa and Shenzi in the GoM). A low salinity injection project would use similar hardware and is, therefore, near technical readiness. There is still uncertainty in understanding the reservoir recovery mechanisms, and the application of the IOR process has not been proven through full field use. However, there are huge benefits in the deepwater Gulf of Mexico or the implementation of a low salinity water injection system at the same time that water injection equipment is added for secondary recovery.
 - f. There is a significant need for low-cost riserless light well intervention (RLWI) technology due to the number and growth rate of wet tree installations.
6. The Paleogene age reservoirs in Keathley Canyon and Walker Ridge have significant oil recovery challenges. The forecast primary RF is only 10% of OOIP, and the expected ROIP in discovered fields is 23 Billion Bbl. There is no production experience, and no suitable analog was found worldwide. The development risk is high due to stepping out into a new frontier of depth, high pressure/high temperature and complex geology
7. The Paleogene requires critical new technology for even primary production and development. Key IOR concepts for improving oil recovery are:
 - a. Adding reservoir energy through water injection.
 - b. Technology for reservoir management of water injection and production from a thick, heterogeneous reservoir. This includes downhole data acquisition (pressure, rate, water cut) and control equipment for multi-zone completions with remote operation or control by RLWI vessel.
 - c. Subsea pumping and downhole pumps with high operating delta pressure to achieve lower BHFP and abandonment pressure.
 - d. Seafloor water injection is needed for remote, ultra-deepwater fields which are a long distance from the host facility.
 - e. Advancements in hydraulic fracturing to enhance productivity and injectivity in a low permeability reservoir.

Additional information can be found in the final report at www.rpsea.org. Work on this project began in February 2009 and concluded in December 2010.

[Back to Table of Contents](#)

Unconventional Resources Project Highlight

Improved Reservoir Access Through Refracture Treatments in Tight Gas Sands and Gas Shales, Project 07122-41

Principal Investigator: Mukul Sharma, The University of Texas at Austin

Partners: Noble Energy, Inc.; BJ Services; Pinnacle Technologies; Anadarko Petroleum Corporation

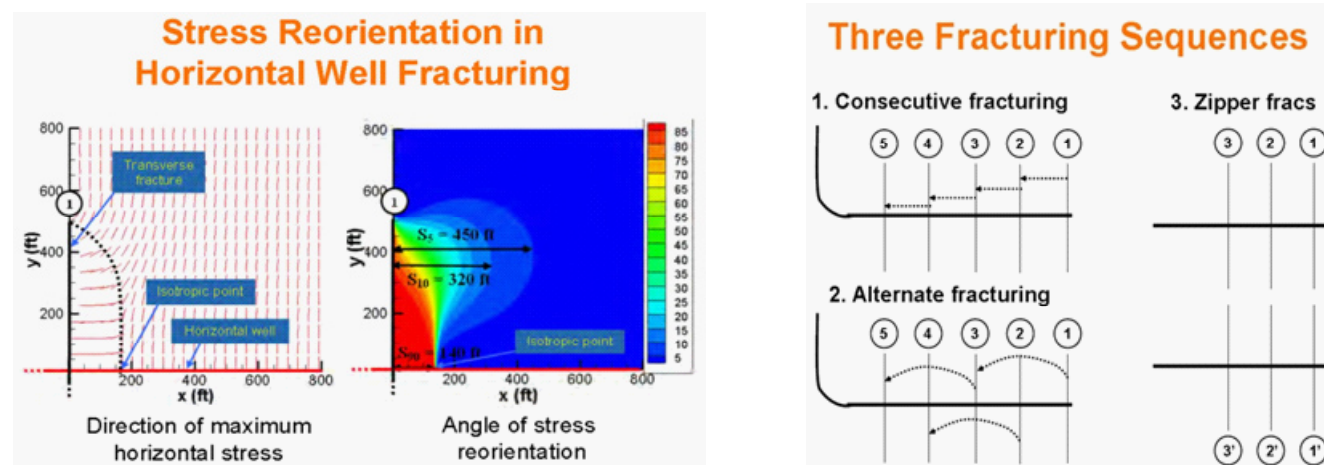
The primary objective of the project is to improve the performance of refracture treatments in gas shales and tight gas sands through novel fluids, better refracture designs and candidate well selection based on poro-elastic models and field data analysis.

This project aims at developing a systematic methodology for providing an operator the following key deliverables:

- A well-defined methodology for candidate well selection based on poro-elastic models and analysis of field data
- Recommendations and charts for the time window most suitable for refracturing for a range of reservoir types, reservoir properties and production profiles
- Application of refracture treatments in horizontal and deviated wellbores
- Refracture treatment designs utilizing novel fluids, proppants and injection strategies

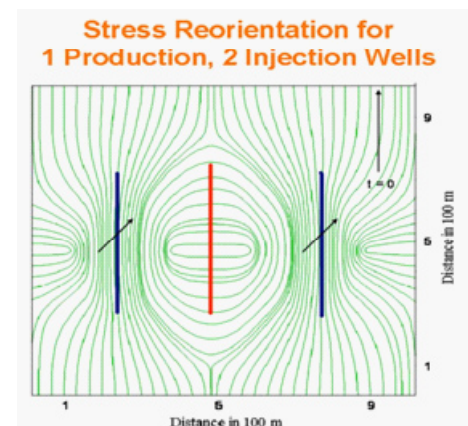
This will be accomplished through field application of newly developed geo-mechanical and proppant placement models and better refracture designs based on novel fluids and proppants.

Quantifying the Concept of Minimum Fracture Spacing in Horizontal Wells:



- If the next fracture is initiated inside the stress reversal region, there is a possibility of:
 - Longitudinal fracture
 - Risk of screen-out
- To avoid longitudinal fractures, the minimum fracture spacing should be greater than S_{90}
- To maintain transverse fractures, the fracture spacing should be greater than S_5
- For any spacing between S_{90} and S_5 , fractures will deviate from the transverse plane
- Stress reorientation limits the spacing of multiple transverse fractures
- Our numerical model provides estimates of the minimum and recommended fracture spacing for any given set of reservoir, fracture properties
- The alternate fracturing technique minimizes fracture spacing
- Significant opportunities for higher production in horizontal well completions may be possible with the alternate fracturing method

Conclusions of Work on Refracturing:



- Stress reversal occurs in production wells but not injection wells.
- We showed the existence of an optimum time at which the areal extent of the stress reversal region is maximum.
- The magnitude (λ_{max}) and timing (t_{max}) of the stress reversal depend on the fluid properties (t), the stress contrast and drawdown (Π), the thickness of the reservoir (y) and the shear modulus of the reservoir and the bounding layers (β).
- The effect of permeability heterogeneity and anisotropy on the magnitude and timing of maximum stress reversal can be incorporated by an appropriate definition of t .
- Fractured production wells in unconventional reservoirs (tight gas, shale gas, heavy oil) with modest stress contrasts constitute ideal candidates for refracturing
- Dimensionless type curves are presented to estimate the optimum time-window for refracturing.

Work continues including address of the use of proppants.

[Back to Table of Contents](#)

Calendar of Events

7/26-27	RPSEA 2011 Ultra-Deepwater Technical Conference, The Woodlands, TX
8/1-4	23rd Rocky Mountain Energy Epicenter, Denver, CO
8/17-19	Summer NAPE Expo, Houston, TX
8/18	HARC/RPSEA Project Workshop - Focusing on Environmental Issues Associated with Unconventional Natural Gas Operations, The Woodlands, TX
9/12	Ultra-Deepwater Floating Facilities TAC Meeting, Sugar Land, TX
9/13	Ultra-Deepwater Subsea Systems TAC Meeting, Sugar Land, TX
9/14	Ultra-Deepwater Flow Assurance TAC Meeting, Sugar Land, TX
9/15	Ultra-Deepwater Geosciences TAC Meeting, Houston, TX
9/18-23	SEG International Exposition and 81st Annual Meeting, San Antonio, TX
9/19	Ultra-Deepwater Systems Engineering TAC Meeting, Houston, TX
9/20	Ultra-Deepwater Reservoir Engineering TAC Meeting, The Woodlands, TX
9/21	Ultra-Deepwater Metocean TAC Meeting, Boulder, CO
9/21	Ultra-Deepwater Environmental, Safety & Regulatory TAC Meeting, Sugar Land, TX
9/22	Ultra-Deepwater Drilling, Completions & Interventions TAC Meeting, Sugar Land, TX
9/28	RPSEA/DOE/PTTC Gas Shales Workshop - American Association of Petroleum Geologists Eastern Section Meeting, Arlington, VA
10/30-11/2	ATCE 2011, Denver, CO

Click here for more information, to register and to view the [complete calendar](#).