

### PERF Newsletter

June 2005

# Environmental, Health, & Safety Solutions for the Petroleum Industry

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#### Board of Directors

Chair: Jill Kerr, ExxonMobil

Vice Chair Todd Ririe, Unocal

Treasurer: Karen Haynes, Shell

Secretary/Archivist/ Webmaster: Virginie Vitello, Total

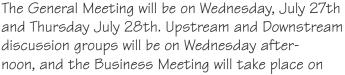
Former Chair: Sara McMillen, Chevron

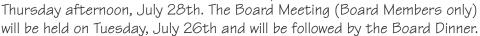
At-Large Members:
Bruce Kennedy, PetroCanada
John Wilkinson, ExxonMobil
Robert Finley, Aramco
Davis Taggart, BP
Dave Fashimpaur, BP

Legal Counsel: F. Joseph Gormley, Esq.

# Summer Meeting to Be Hosted by EPRI in Palo Alto on July 27 and 28

The Electric Power Research Institute (EPRI) will be hosting the next PERF Meeting. The meeting theme will deal with Air problems and will present some technologies and regulations that improve air quality. EPRI will present an overview of their current programs.





The meeting will take place at EPRI at 3412 Hillview Avenue, Palo Alto, California.

Information on the meeting, including an agenda, speakers, presentation topics, and registration details, can be found on our Web site at: <a href="http://www.perf.org/index.php?act=meetings\_upcoming">http://www.perf.org/index.php?act=meetings\_upcoming</a>

# PERF Welcomes New Member Company

**Repsol YPF**, Spain's largest oil and gas company has recently joined PERF. Repsol is a



fully integrated oil and gas company with proven reserves of 5.4 billion barrels of oil equivalents. Most of these reserves are located in Latin America, the Middle East, and North America. The company owns 99% of YPF, Argentina's #1 oil company and has operations in 28 countries. Repsol YPF has five refineries in Spain. PERF welcomes Repsol YPF and new representative Mr. Fernando Temprano-Posadas. A list of all the PERF representatives can be found on <a href="http://www.perf.org/index.php?act=contact\_reps">http://www.perf.org/index.php?act=contact\_reps</a>.



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# Summary of PERF Project 02-02 – Bioremediation Sharing Project

This PERF project is complete. The participants were ExxonMobil, Chevron, Unocal and Saudi Aramco. This project was proposed in 2002, and a kick-off meeting was held in Houston. At this first meeting, ExxonMobil and Chevron provided the participants with their project deliverables. As this was a "sharing" project, some of the deliverables were completed prior to the proposal of this PERF project. Both ExxonMobil and Chevron contributed their in-house manuals on how to implement bioremediation projects.

Unocal and Saudi Aramco's deliverables were for projects that had not been completed at the time this project was proposed. After 2 years, Unocal and Saudi Aramco's deliverables were completed and a final project meet-

ing was held in April of 2005. Unocal hosted this final meeting at their Guadalupe field offices located in Central California, and presented the project participants with the results of a phytoremediation study that investigated the contribution of plant roots and microbes to accelerate the degradation of petroleum. This phytoremediation project consisted of native willows and poplars densely planted above a diluent plume in an interdunal area. The PERF project participants also visited with professors at the California Polytechnic State University's "Environmental Biotechnology Institute" located in San Luis Obispo, California. The staff at the Institute was an integral participant in Unocal's project at the Guadalupe field.

Saudi Aramco's deliverable was the result of a study in the Gulf of Arabia to determine the effectiveness of bioremediation of oil spills that resulted from the Gulf war. The objectives of this research study were to:

- 1. Study the kinetics of oily sludge degradation in landfarming under natural conditions, and under enhanced conditions with water, nutrients and tilling.
- 2. Study the kinetics of oily sludge degradation in a bioreactor (under controlled conditions).
- 3. Assess the effect of increasing oily waste loading under arid conditions.
- 4. Determine if biodegradation is the principal mechanism for the degradation of hydrocarbon versus weathering.
- 5. Assess the health risk associated with volatile organic compounds (VOC) emissions resulting from both landfarm and bioreactor operations for onsite workers.

The main focus of this study was to determine the degradation rate of oily sludge in a landfarm under the field conditions of an arid region. In this study, a full-scale field experiment that is most representative of arid climatic conditions was conducted. Elements of the study included: site selection, experimental layout, design, construction, and operation of the cells, sludge application, sampling procedures and laboratory work.







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## PERF Board and Officers Nominating Committee to be Formed

If you would like to become involved in PERF leadership, contact one of the board members and let them know of your interest. At the PERF board meeting in July of 2005, three people will be appointed to form the nominating committee for the upcoming election of PERF officers and directors. The elections will be held at the next annual PERF meeting in the fourth quarter of this year. A slate of nominated officers and directors will be announced to each PERF member company's designated representative prior to this meeting.

PERF officers manage PERF's administrative structure and finances, preside at meetings, and interface with government representatives on behalf of PERF. All PERF officers are also directors, and together with the at-large directors, form PERF's board. The Board sets the agenda for future PERF meetings, determines PERF priorities and sets PERF's budget and dues. The Board meets prior to each meeting, and as often as necessary outside of regular PERF meetings, usually by conference call.

#### Why join PERF?

PERF provides a forum for members to come together to develop new solutions to safety, health and environmental concerns. Currently we

have 11 active PERF projects worth over \$4 million dollars. Membership is \$4,000 per company each year,

#### Interested in Joining PERF?

If you are interested in joining PERF, please contact one of the board members. Visit our web site at <a href="https://www.perf.org">www.perf.org</a> for a full list of board members and e-mail contact information.

with three categories of membership. If you are in the exploration, production or refining industry, you might want to consider becoming a full member.

Full members have full voting rights and benefits of the organization. Associate membership is open to those companies involved in supporting the petroleum industry. Associate members have all the rights of membership, except those of sitting on the Board of Directors. A Liaison participant is generally a trade organization; they can attend PERF meetings, participate in discussion groups and projects, but cannot vote or sit on the Board of Directors.

Since 1999, mergers of major oil companies have led to a reduction in PERF membership and the subsequent reduction in the number of PERF projects. Coordination, project initiation and PERF leadership are critical to the success and long-term sustainability of the PERF organization.

Please consider becoming a PERF member now!!

### Spring Meeting Highlights



The 67th PERF Meeting was hosted by BP, March 30<sup>th</sup> and 31<sup>st</sup>, 2005 in London, England. The theme of the meeting was "Emerging International Environmental Regulations and Technology Opportunities". The meeting was attended by over 25 participants from PERF members, suppliers, and universities.

The topics included: IPPC regulatory impacts and solutions, EU emissions trading schemes, upstream drilling environmental challenges, and remediation issues. Presentations were provided by PERF members, consultants, and others.

A PERF Board of Directors meeting was held preceding the meeting on March 29. Upstream and down-stream discussion groups, status reports, and new proposals were also covered during the PERF business meeting on March 31. You can download most of the presentations on the PERF web site at the following URL: <a href="http://www.perf.org/index.php?act=meeting">http://www.perf.org/index.php?act=meeting</a> 2005-03 overview.

PERF project proposals can be downloaded at <a href="http://www.perf.org/index.php?act=research\_proposals">http://www.perf.org/index.php?act=research\_proposals</a>

Environmental, Health, & Safety Solutions for the Petroleum Industry

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TEAMWORK: Together we achieve the extraordinary!



We're on the web: http://www.perf.org/

PERF

The Petroleum Environmental Research Forum (PERF)\* is a research and development joint venture, formed to provide a stimulus to and forum for the collection, exchange, and analysis of research information relating to the development of technology for health, environment & safety, waste reduction and system security in the petroleum industry. PERF is a non-profit organization of Members which are corporations engaged in the petroleum industry that recognize the importance of a clean, healthy environment and are committed to support cooperative research and development. PERF does not itself participate in research projects but provides a forum for Members to collect, exchange, and analyze research information relating to practical and theoretical science and technology concerning the petroleum industry, and a mechanism to establish joint research projects in that field.

\*The name Petroleum Environmental Research Forum and its acronym PERF are registered service marks.

### PERF External Group Liaisons

PERF encourages external groups such as trade associations, national laboratories, and research institutes to join as Liaison members. PERF values the partnerships that we have with these external groups as they contribute valuable research in the PERF projects they join.

Liaison members appoint Representatives that have the right to attend and participate in meetings of PERF and its committees but they do not have the right to vote or to serve as an officer of PERF. Liaisons are not required to pay a membership fee.

Liaison members include:

American Petroleum Institute (API)

Department of Energy (USDOE)

Gas Technology Institute (GTI)

Lawrence Berkeley National Laboratory (LBNL) Water Environmental Research Foundation (WERF)

Argonne National Laboratory (ANL)

Electric Power Research Institute (EPRI)

International Association of Oil and Gas Producers (OGP)

Oak Ridge National Laboratory (ORNL)

University of Manchester Institute of Science and Technology (UMIST)

### Member Companies & Representatives

Amerada Hess Gerry Bresnick Aramco Services Co. Robert Finley BP Davis Taggart Sara McMillen Chevron ConocoPhillips Sung-I Johnson EniTechnologie Renzo Boni ExxonMobil John Wilkinson INA-Naftaplin Ivo Omrcen Petrobras Sergio Soares PetroCanada Bruce Kennedy Shell Pete Robinson Statoil Stale Johnsen Total Virginie Vitello Todd Ririe Unocal

Repsol YPF Fernando Temprano-

Posadas

### Associate Members & Representatives

BOC Gases Technology

Ram Ramachandran

Canadian Petroleum Products

Institute (CPPI)

Adolfo Silva