



*Established in 1986 to Stimulate Cooperative
Research and Development of Technology for
Environmental Pollution Control and Waste
Treatment for the Petroleum Industry*

www.perf.org



◆ Objectives:

- To provide a stimulus for cooperative research and development of technology for the environment, health, safety, waste reduction and system integrity for the petroleum industry.
- To provide a forum to discuss and develop proposals for cooperatively funded projects relating to these areas.

◆ Advantages of PERF:

- DEAL WITH O&G INDUSTRY SPECIFIC PROBLEMS
- RESPOND QUICKLY IN INITIATING R&D TO MEET NEEDS OF COMPANIES
- CREATE CRITICAL MASS OF TECHNICAL EFFORT TO EXPEDITE RESULTS
- CONDUCT PROJECTS OF BROADER SCOPE THAN ACHIEVABLE BY INDIVIDUAL FIRMS
- EXAMINE MORE TECHNICAL AREAS OF CONCERN THAN POSSIBLE BY INDIVIDUAL FIRMS



Incentives:

- REDUCE R&D COSTS BY AVOIDING DUPLICATION
- ENSURE NEEDED R&D ON IMPROVED CONTROL/TREATMENT TECHNOLOGY IS DONE
- INVOLVE MORE EXPERTISE/CREATIVITY TO OBTAIN MORE INNOVATIVE SOLUTIONS
- LEVERAGE FUNDING, INCLUDING POSSIBLE GOVERNMENT SOURCES



◆ Who Can Participate

- PERF projects are open to anyone who can meet the requirements of the participation agreement established for that project
- Project participation is not limited to PERF members or petroleum companies, but must be sponsored by a member
- Recent PERF Co-operative research programs have special provisions to set the contribution for participation lower for government agencies and trade organizations

◆ Projects to-date

- 81 projects with a value of > \$63 million have been completed
- 13 projects with a value of > \$2.2 million are underway
- 11 projects are under consideration



◆ Member Companies

- ❖ Amerada Hess
- ❖ Aramco
- ❖ BP
- ❖ Chevron
- ❖ ConocoPhillips
- ❖ EniTechnologie
- ❖ ExxonMobil
- ❖ INA-Naftaplin
- ❖ Petrobras
- ❖ Petro Canada
- ❖ RepsolYPF
- ❖ Shell
- ❖ Statoil
- ❖ Suncor
- ❖ Total

• Liaison Members

- ❖ American Petroleum Institute (API)
- ❖ Argonne National Laboratory (ANL)
- ❖ US Department of Energy (DOE)
- ❖ Electric Power Research Institute (EPRI)
- ❖ Energy & Environmental Research Center (EERC)
- ❖ Gas Technology Institute (GTI)

• Associate Members

- ❖ Champion Technologies, Inc.
- ❖ Canadian Petroleum Products Institute (CPPI)
- ❖ Pall Corporation
- ❖ The QUESTOR Centre
- ❖ Veolia Water North America Operating Services Inc.
- ❖ Lawrence Berkeley National Laboratory (LBNL)
- ❖ International Association of Oil & Gas Producers (OGP)
- ❖ Oak Ridge National Laboratory (ORNL)
- ❖ University of Manchester Institute of Science and Technology (UMIST)
- ❖ Water Environmental Research Foundation (WERF)
- ❖ VITO - Flemish institute for technological research



- ◆ **2008-01** Next Generation Optical Sensors for Gas & Vapor Detection-
BP-QUESTOR
- ◆ **2007-06** An Assessment of Substances in European Refinery Effluents-
ExxonMobil
- ◆ **2007-05** Membrane Bioreactor Demonstration-ExxonMobil
- ◆ **2007-02** Metals Characterization of crude oil/ Desalter Mass balance-
Champion Technologies, Inc.; Shell
- ◆ **2006-04** TPH 2D GC Methodology - Predicting Environmental Effects-
ExxonMobil
- ◆ **2006-03** Waste Water Treatment Plant - Fate and Effects of Pollutants-Total
- ◆ **2006-01** Whole Effluent Assessment-Total



◆ Active Projects

- 06-07 Arsenic Sharing Cooperative
- 04-06 Reducing Desalter Environmental Impacts

◆ Completed

- 03-01 Mercury Cooperative
- 01-08 Downstream Waste Management
- 00-03 Next Generation Lo-NO_x Burner Performance Testing
- 99-06 Upset Early Warning Devices for WWTP
- 98-09 Accidental Release Mitigation Project

Examples of Upstream PERF Projects



◆ Active Projects

- 04-05 Understanding the effects of time and energy on the effectiveness of dispersants

◆ Completed

- 03-03 Managing Waste in Countries with Little Infrastructure
- 02-02 Bioremediation Sharing Project
- 95-12 Monitoring, Composting, and Soil Bioremediation

Themes of Recent PERF Meetings

Date	Host	Location	Theme
March 2006	Total	Paris, France	Environmental risk assessment methodologies: analytical and biological aspects
July 2006	Chevron & Lawrence Berkeley National Laboratory	Berkeley, CA	Air Quality
October 2006	BP & Argonne National Laboratory	Chicago, IL	Remediation
February 2007	Champion Technologies	Houston, TX	Chemical Treatment of Water
June 2007	QUESTOR	Belfast, UK	Advanced Biotechnology
November 2007	ConocoPhillips	Bartlesville, OK	Environmental Challenges of Heavy Crude Oil
February 2008	Flemish Water Institute (VITO)	Antwerp, Belgium	Water Management & Re-Use

Next Meeting

79th Meeting of the Petroleum
Environmental Research Forum (PERF)

Innovative Approaches to Managing Water Resources

Amsterdam, NL

April 16-17, 2009

*Hosted by
Shell and TNO*



PERF Board Members



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Chad Shockley **ExxonMobil Legal Counsel** - Joe Gormely

Upstream Discussion Group **Downstream Discussion Group**

Jill Kerr

Dave Fashimpaur

Further Information or To Become a Member



- ◆ www.perf.org
- ◆ *PERF Chairman, Todd Ririe: todd.ririe@bp.com*
- ◆ **PERF MEMBERSHIP COVERS:**
 - Participation in discussion groups
 - Participation in meetings (typically 2-3 per year)
 - Access to all current and prior meeting materials via website
- ◆ Annual membership maintenance fee is \$5,000 which covers costs incidental expenses and part-time legal counsel. There is a one-time initiation fee of \$2,000.