MARINE VENTURES

JOSEPH P. SMITH, Ph.D.

Marine Environmental Consultant

Dr. Joseph Smith holds a Ph.D. in Physical Chemistry and a B.S. in Chemistry and has 26 years' experience in the oil and gas industry. He has significant experience leading, performing, and communicating the results of studies of the effects of offshore oil and gas operations on the marine environment. He has expertise in (1) numerical modeling of offshore discharges of drilling fluids, drill cuttings, and produced water, (2) the environmental fate and effects of drilling and production discharges, (3) the environmental effects of seawater usage by offshore facilities, and (4) the environmental effects of cooling water intakes and outfalls. He has led joint industry environmental studies sponsored by organizations such as the Offshore Operators Committee, the American Petroleum Institute, and the International Organization of Oil and Gas Producers.

Education

Ph.D. Physical Chemistry, University of California, Berkeley, 1978

B.S.Chemistry, University of Rochester, 1972

He served on the U.S. Bureau of Ocean Energy Management Regulation and Enforcement Outer Continental Shelf Scientific Committee from 2003 to 2011. In recognition of his contributions to the offshore industry, the Offshore Operators Committee made him a lifetime member in 2015.

EXPERIENCE

November 2017 to Present: Marine Ventures International Inc. – Senior Consultant

- Provides scientific consultation to the marine energy industry

ExxonMobil Upstream Research Company - Technical Staff (1990 – 2016)

- Senior Technical Professional Advisor for Environmental Research (2010-2016)
- Team Leader for environmental technology research: - Studies on offshore discharges, environmental effects of seawater usage by offshore facilities, oil spill response, and environmental issue management 1994-2010
- Lead role in development, validation, and publication of the Offshore Operators Committee Mud and Produced Water Discharge Model 1990-1999
- Technical expert providing environmental support for ExxonMobil's offshore operations
- Member, United States Bureau of Ocean Energy Management Regulation and Enforcement Outer Continental Shelf Scientific Committee, 2003 – 2011
- International Association of Oil and Gas Producers Drilling Waste Management Task Force; Chair; 2013-2016. Led effort resulting in publication of
  - IOGP Report 543: Environmental fate and effects of ocean discharge of drill cuttings and associated drilling fluids from offshore oil and gas operations. (2016)
  - IOGP Report 557: Drilling waste management technology review (2016)
- Offshore Operators Committee Cooling Water Intake Structure Technical Workgroup Chair 2008-2016.
- International Association of Oil and Gas Producers Offshore Environmental Monitoring Task Force; Member, 2007 – 2008
- Angola Regional Environmental Monitoring Program Technical Work Group, 2007 - 2008
- Offshore Operators Committee Environmental Subcommittee, Co-chair, 2005 – 2016
- Gulf of Mexico Synthetic Based Mud Industry Research Consortium - Chairman of Modeling Workgroup 1997 – 2008, Chairman of Seabed Survey JIP Workgroup 2005 – 2008
- Led Oil Industry Technical Work Group on Mercury 2002
- E&P Forum Drilling Muds Task Force - Chairman, 1997 -1999
- API Produced Water Toxicity Reduction Evaluation Workgroup - Chairman 1994-1996

- E&P Forum Oil Based Mud Limited Interest Project Steering Group 1993 – 1996
- Petroleum Industry Operators Environment Health and Safety Committee (Angola) Drill Cuttings Disposal Scientific Workgroup 2000 – 2001
- Offshore Operators Committee Produced Water Bioaccumulation JIP Work Group '94 - '97
- Led Offshore Operators Committee Produced Water Model Field Validation Test (1992)

PEER-REVIEWED PUBLICATIONS

Frank E. Muller-Karger , Joseph P. Smith, Sandra Werner, Robert Chen, Mitchell Roffer, Yanyun Liu, Barbara Muhling, David Lindo-Atichati, John Lamkin, Sergio Cerdeira-Estrada, David B. Enfield (2014); “Natural variability of surface oceanographic conditions in the offshore Gulf of Mexico”, Progress in Oceanography Volume 134, May 2015, Pages 54–76

Smith, J.P., Brandsma, M.G., Nedwed, T.J. (2004); "Field Verification of the Offshore Operators Committee (OOC) Mud and Produced Water Discharge Model" , Environmental Modeling and Software" (2004) Vol 19 pp 739-750.

Nedwed, T.J., Smith, J.P., and Brandsma, M.G.. (2004); "Verification of the OOC Mud and Produced Water Discharge Model Using Lab-Scale Plume Behavior Experiments" , Environmental Modeling and Software (2004) Volume 19 pp 655 – 670.

Brandsma, M.G., Smith, J.P., O'Reilly, J.E., Ayers, R.C., Jr., Holmquist, A.L. (1992); "Modeling Offshore Discharges of Produced Water" in Produced Water: Technological/Environmental Issues and Solutions, Ray, J.P. and Englehardt, R. eds. Plenum Press , NY, pp 59-71.

Smith, J.P., Francisco, M.A., Houser, P.J.; "Wetting and Chemical Interactions Between Crude-Oil Components and Berea Sandstone", J. Energy and Fuels, (1988) 3: 299-303

Smith, J.P., Lefkowitz, S., Trifunac, A.D. ;"Observations of Short Lived Radical Ion Pairs in Pulse Radiolysis of Alkane Solutions by Time Resolved Fluorescence Detected Magnetic Resonance. Electron Paramagnetic Resonance Spectra of Alkane Radical Cations", J. Phys. Chem. (1982)86, 4347-4351.

Smith, J.P., Emptage, M.H., Orme-Johnson, W.H.; "Magnetic Susceptibility Studies of Native and Thionine Oxidized Molybdenum Iron Protein From Azotobacter vinelandii Nitrogenase", J. Biol. Chem. (1982)257, 2310-2313.

Smith, J.P., Trifunac, A.D., "Effects of Solute Deuteration on Time Resolved Optically Detected EPR of Radical Ion Pairs in Pulse Radiolysis", Chem. Phys. Letters (1981) 83, 195-198.

Kirby, J.A., Robertson, A.S., Smith, J.P., Thompson, A.C., Cooper, S.R., Klein, M.P.; "State of Manganese in the Photosynthetic Apparatus.1. Extended X-ray Absorption Fine Structure Studies on Chloroplasts and Di-oxo-Bridged Dimanganese Model Compounds", J. Am. Chem. Soc. (1981) 103, 5529-5537.

Smith, J.P., Trifunac, A.D.; "Optically Detected Time Resolved Electron Paramagnetic Resonance. Excited States and Radical Ion Kinetics in Pulse Radiolysis of Aromatics in Cyclohexane Solutions", J. Phys. Chem. (1981) 85, 1645-1653.

Trifunac, A.D., Smith, J.P. ; Optically Detected Time Resolved EPR of Radical Ion Pairs in Pulse Radiolysis of Liquids", Chem. Phys. Letters (1980) 73, 94-97.

OTHER PUBLICATIONS AND SPECIAL REPORTS

Smith, J.P. (2008); “Assessment of the Fisheries Impact of Seawater Use by Offshore Facilities” , IPTC Paper 12126, presented at the International Petroleum Technology Conference held in Kuala Lumpur, Malaysia 3-5 December 2008

Nedwed, T.J., Smith, J.P., Melton, H.R. (2006); “Fate of Nonaqueous Drilling Fluid Cuttings Discharged from a Deepwater Exploration Well” SPE Paper 98612 presented at Society of Petroleum Engineers International Conference on Health, Safety, and Environment in Oil and Gas Exploration and Production held in Abu Dhabi, U.A.E., 2–4 April 2006

Parker, M.E. C. Antaih, H. R. Melton, R. Roberts,, J. P. Smith,, T.J. Nedwed (2004); “An Assessment of the Fate and Effects of Drilling Discharges in Deepwater Areas” presented at “The 2004 Biennial International Health, Safety and Environment (HSE) Conference on the Oil and Gas Industry in Nigeria “ , Port Harcourt Nigeria

	Melton, H.R., J.P. Smith, H.L. Mairs, R. Bernier, E. Garland, A.H. Glickman, , F. Jones, J.P. Ray, D. Thomas, and J. Campbell, (2004) "Environmental aspects of the use and disposal of non aqueous drilling fluids associated with offshore oil &gas operations", SPE 86696 presented at The Seventh SPE International Conference on Health, Safety, and Environment in Oil and Gas Exploration and Production held in Calgary, Alberta, Canada, 29-31 March 2004
	Parker, M.E., Smith, J.P. (2004); Environmental Significance of Mercury in Drilling Discharges SPE Paper Number 86697 presented at the SPE International Conference on Health, Safety, and Environment in Oil and Gas Exploration and Production, 29-31 March, Calgary, Alberta, Canada
	Trefry,J.H. and J.P. Smith (2003); "Forms of Mercury in Drilling Fluid Barite and Their Fate in the Marine Environment: A Review and Synthesis" SPE Paper 80571, Presented at SPE/EPA/DOE Exploration and Production Environmental Conference, 10-12 March 2003, San Antonio, Texas
	Melton, H.R., Smith, J.P., Martin, C.R., Nedwed, T.J., Mairs, H.L., Raught, D.L. (2001); "Offshore Discharge of Drilling Fluids and Cuttings--A Scientific Perspective on Public Policy", Presented at the Rio Oil and Gas Conference, Rio de Janeiro, Brazil, 16-19 October 2000. IBP44900.
	Brandsma, M.G., Smith, J.P. (1995); "Dispersion Modeling Perspectives on the Environmental Fate of Produced Water Discharges" presented at the International Produced Water Seminar, Trondheim Norway, 25-28 September 1995.
	Smith, J.P., Mairs, H.L., Brandsma, M.G., Meek, R.P., Ayers, R.C. Jr. (1994) "Field Validation of the Offshore Operators Committee (OOC) Produced Water Discharge Model" SPE Paper 28350 presented at the SPE 69th Ann. Tech. Conf. Exhib., New Orleans, LA, September 25-28 1994.
	Smith,J.P., Mairs, H.L.; Brandsma,M.G.; Meek, R.P.; and Ayers,R.C.,Jr.(1993); "Field Observations of Produced Water Dilution: Comparison with Dispersion Model Predictions", report prepared for the Offshore Operators Committee
	Smith, J.P. (1993); "Field Observations of Dilution of Radium-226 from Produced Water Discharges - Comparison with Dispersion Model Predictions", report prepared for the Offshore Operators Committee.
	Minton, R.C., McKelvie, S., Caudle, D., Ayers, R.C., Jr., Smith, J.P., Cline, J.T., Duff, A., Blanchard, J. , and Read, A.D. (1993); "The Physical and Biological Effects of Processed Oily Drill Cuttings - E&P Forum Joint Study" SPE Paper 26750, presented at Offshore Europe '93, Aberdeen, Scotland, September 1993.