



Key Resumes

Robert J. Pirkle, Ph.D., Chief Executive Officer

Dr. Robert J. Pirkle has focused his formal training in chemistry in the area of the geochemistry of subsurface sediments and water, particularly as applied to the formation, accumulation and microseepage of petroleum and its detection in near surface sediments as a petroleum exploration tool. This experience has been extended to applications involving monitoring and remediation of stored petroleum products in near surface caverns and salt dome storage wells, underground storage tanks, landfills and other environmental applications. To enable these interests, Dr. Pirkle founded and has developed a nationally recognized environmental services company, Microseeps, Inc., which has the capability to design, plan and execute pertinent investigations and further to interpret and report findings to interested parties on a national and international scale.

Education:

The University of Western Ontario - London, Ontario, Canada Doctor of Philosophy – 1973 Major - Chemistry	Auburn University - Auburn, AL Bachelor of Science Major - Chemistry
Auburn University - Auburn, AL Master of Science Major - Chemistry	Cornell University - Ithaca, NY Postdoctoral Studies and Research Associateship Chemistry & Applied Physics

Professional Experience:

Microseeps, Inc., 1985 - present
President & Chief Executive Officer

Houston Area Research Center, Geotechnical Research Institute
Houston, TX, 1985 - 1990
Senior Research Associate/Consultant

Gulf Research & Development Company, Exploration Research Division,
Pittsburgh, PA 1977 – 1985,
Geochemistry Program, Director

Memberships:

- American Association of Petroleum Geologists
- American Chemical Society
- National Ground Water Association
- Groundwater Resources Association of California

Publications:

- R.W. Mitchell, L.J. Kuzma, R.J. Pirkle, J.A. Merritt, "Vibrational Spectra of Phosphiran, Phosphiran-1-d₁, and Phosphiran-2-3-d₄", *Spectrochimica Acta* 25A, 819-829, 1969.
- J.A. Merritt and R.J. Pirkle, "Infrared and Raman Spectra of 1,5-Diazanaphthalene", *J. Mol. Spectroscopy* 35, 251-259, 1970
- J.C.D. Brand, B.J. Forrest, V.T. Jones, and R.J. Pirkle, "The ¹B₂-¹A₁ Transition of Aniline in Low-Temperature Matrices", *J. Mol. Spectroscopy* 39, 352-356, 1971.
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- R.J. Pirkle and V.T. Jones, "Matrix Isolation Spectrum of the 2491 Å System of NO₂", *J. Mol. Spectry*, 54, 375, 1975.
- R.J. Pirkle, C.C. Davis, and R.A. McFarlane, "Self-Mode-Locking of an Iodine Photodissociation Laser", *J. Applied Physics* 46, 4083, 1975.
- R.J. Pirkle, J.R. Wisenfeld, C.C. Davis, G.J. Wolga, and R.A. McFarlane, "Production of Electronically Excited Iodine Atoms, I(²P_{1/2}) Following Injection of HI into a Flow of Discharged Oxygen", *IEEE Journal of Quantum Electronics* 11, 838, 1975.
- R.J. Pirkle, C.C. Davis, and R.A. McFarlane, "Comparative Performance of CF₃I, and CD₃I in an Atomic Iodine Photodissociation Laser", *Chem. Phys. Letters* 36, 305, 1975.
- R.J. Pirkle and T.A. Cool, "Vibrational Energy Transfer for H₂-D₂ and H₂-HCl Mixtures from 220-450K", *Chem Phys. Letters* 36, 305, 1975.
- C.C. Davis and R.J. Pirkle, "A Versatile Flash Photolysis System for Photodissociation Laser Studies", *J. Phys. E.* 9, 580, 1976.
- C.C. Davis, R.J. Pirkle, R.A. McFarlane, and G.J. Wolga, "Output Mode Spectra, Quenching Reversibility, and Short Pulse Generation in Atomic Iodine Photodissociation Lasers", *IEEE Journal of Quantum Electronics* 12, 334, 1976.
- H.D. Bist, J.C.D. Brand, A.R. Hoy, V.T. Jones, and R.J. Pirkle, "The B-X System of Nitrogen Dioxide in Neon Matrices", *J. Mol. Spectry.*, 1977.
- D.M. Richers, V.T. Jones, M.D. Matthews, J. Maciolek, R.J. Pirkle, and W.C. Sidle, "A Landsat-Soilgas Geochemical Survey of the Patrick Draw Area, Sweetwater County, Wyoming, 1983 - Survey", *AAPG Bulletin* 70, No. 7, July 1986.

Papers:

- J.C.D. Brand, J.L. Hardwick, R.J. Pirkle, and C.J. Seliskar, "Observations on the Low Lying ²B₂ State of NO₂" presented at the 28th Symposium on Molecular Structure and Spectroscopy, The Ohio State University, Columbus, Ohio, June 1973.

- J.R. Wiesenfeld and R.J. Pirkle, "The Effect of Chlorofluoromethanes on the Chemistry of the Stratosphere: Proposed Experimental Objectives", presented at New York State Assembly Committee Hearing on Freons in the Environment, May 1975
- V.T. Jones and R.J. Pirkle, "Helium and Hydrogen Soil Gas Anomalies Associated Deep or Active Faults". Paper presented at the 181st American Chemical Society Meeting, Atlanta, Georgia, April 1981.
- J.D. Melvin, D. Masdea, V.T. Jones, and R.J. Pirkle, "Computer Based Gas Chromatography Control and Data Reduction System", paper presented at the American Chemical Society Meeting, Washington, D.C. August 1983.
- R.J. Pirkle, R.N. Hager, and V.T. Jones, "Second Determination of Benzene and Toluene at the Well Site", Paper presented at the 187th American Chemical Society Meeting, St Louis, Missouri, April 1984.
- R.J. Pirkle and R.J. Drozd, "Hydrocarbon Contamination in the Near Surface Soil". Paper presented at the 187th American Chemical Society Meeting, St Louis, Missouri, April 1984.
- R.J. Pirkle, "Geochemical Prospecting in the Gulf of Mexico". Paper presented at the 189th American Chemical Society Meeting, Miami Beach, Florida, April 1985.
- R.J. Pirkle, R.V. Brodine, and E.S. Driver, "Geochemical Prospecting Over the Rose Hill Oil Field, Lee County, Virginia, Using a Shallow Probe Technique". Paper presented at the 190th American Chemical Society Meeting, Chicago, Illinois, September 1985.
- R.J. Pirkle and R.V. Brodine, "Interpretation of Soil Gas Geochemical Anomalies at the Rose Hill Oil Field, Lee County, Virginia". Paper presented at the 14th Annual Meeting of the Eastern Section AAPG, Williamsburg, Virginia, November 1985.
- R.J. Pirkle, "Near Surface Geochemical Monitoring of Underground Gas Storage Facilities". Paper presented at the American Gas Association meeting, Chicago, Illinois, April 1986.
- R.J. Pirkle and Van Price, "Leak Detection and Monitoring". Paper presented at the Conference on Hazardous Materials in the Environment, Atlantic City, New Jersey, June 1986.
- R.J. Pirkle, J.C. Williams, M.C. Kennicut, and J.M. Brooks, "Surface Geochemical Prospecting in the Northern Gulf of Mexico: A Regional Evaluation". Paper presented at the 194th American Chemical Society Meeting, New Orleans, Louisiana, September 1987.
- R.J. Pirkle, V. Price, and B.B. Looney, "Soil Gas Survey Methods for Gasoline and Diesel Fuel Contamination". Paper presented at the ACS Meeting, New York, New York, August 1991.
- R.J. Pirkle, D.E. Wyatt, V. Price, and B.B. Looney, "Barometric Pumping: The Link Between Soil Gas and The Atmosphere". Paper presented at the National Ground Water Association,
- R.J. Pirkle, D.E. Wyatt, V. Price, B.B. Looney, and D.M. Richers, "Soil Gas Waste Site Screening at the Savannah River Site". Paper presented at the USDOE ER 93 Environmental Remediation Conference, Augusta, Georgia, October 1993.
- R.V. Brodine, G.B. Sexton, R.J. Pirkle, and D.E. Wyatt, "Advancements in Environmental Applications of Ground Penetrating Radar". Paper presented at USDOE ER 93 Environmental Remediation Conference, Augusta, Georgia, October, 1993.

- Patrick W. McLoughlin, Michael B. Taylor, and Robert J. Pirkle, “Making the Use of Dissolved Hydrogen Analysis Easier: A New Sampling Procedure, Thorough Holdtime Studies and New Quality Assurance and Control Measures”. Paper presented at Battelle Conference, San Diego, 1999.
- Robert J. Pirkle, Patrick W. McLoughlin, and Robert C. Williams, “Hydrogen Analysis Using an Off-Site Laboratory Analysis—Testing with Field Samples”, Poster Presentation at 17th Contaminated Soils, Sediments and Groundwater Conference, 2000.
- Michael B. Taylor, Patrick McLoughlin, Donn Marrin, and Robert J. Pirkle, “Biodegradation Indicator Graphical (BIG) System for Biogeochemical Evaluation of Groundwater Systems, Poster abstract for 17th Annual Contaminated Soils, Sediments, and Groundwater Conference, 2000.
- Patrick McLoughlin, Robert Pirkle, Tim Buschek, Ravi Kolhatkar and Norman Novick, “Redox Conditions at Fuel Oxygenate Release Sites”, Battelle Conference, San Diego, 2001.
- Patrick W. McLoughlin, Robert Pirkle, Joseph E. Haas II, Stephen S. Koenigsberg, Donald A. Trego and Michael B. Taylor, “Case Study: Manipulating Groundwater Redox Conditions for MTBE Remediation”, Battelle Conference in San Diego, 2001.
- Robert J. Pirkle, Patrick McLoughlin, “Sampling and Analyses Developments for Monitored Natural Attenuation”, Battelle Conference in San Diego, 2001.
- Patrick McLoughlin, Robert Pirkle, Tim Buschek, Ravi Kolhatkar and Norman Novick, “Redox Conditions at Fuel Oxygenate Release Sites”, Proceedings of the Sixth International In Situ and On-Site Bioremediation Conference, vol. 6, no 1, pg. 35, San Diego, CA, 2002.
- Robert J. Pirkle and Patrick W. McLoughlin, “The Analysis of Selected Components of Reformulated Gasoline in Environmental Samples” from MTBE Handbook, ed. Kostecki, P. and Moyer, E. Amherst Scientific Publishers, 2002.
- Patrick W. McLoughlin, John T. Wilson, Dennis Fine and Robert J. Pirkle, “Hydrolysis of MTBE in Ground Water Samples Preserved with Hydrochloric Acid”, Proceedings of the 2002 Petroleum Hydrocarbons and Organic Chemicals in Ground Water, Atlanta, GA, 2002.
- Robert J. Pirkle and Patrick W. McLoughlin, “A Three Laboratory Study of a Complete Analysis of Reformulated Gasoline in Ground Water”, Proceedings of the 2002 Petroleum Hydrocarbons and Organic Chemicals in Ground Water, Atlanta, GA, 2002.
- Robert J. Pirkle and Patrick W. McLoughlin, "Enhancing Natural Attenuation through Measurement of Volatile Fatty Acid Concentrations", Battelle Conference, Orlando, FL, 2003.
- Patrick W. McLoughlin and Robert J. Pirkle, "Field Observations of a Methyl tert-Butyl Ether Degradation Product", Battelle Conference, Orlando, FL, 2003.
- Robert J. Pirkle and Patrick W. McLoughlin, “Implications from an Overview of Volatile Fatty Acid Observations”, Proceedings of the Eighth International In Situ and On-Site Bioremediation Symposium, Baltimore, MD, June 2005.
- Patrick W. McLoughlin and Robert J. Pirkle, “Electron Shuttles in Redox Processes: Characterization, Quantification and Remediation Optimization”, Proceedings of the Eighth International In Situ and On-Site Bioremediation Symposium, Baltimore, MD, June 2005.