

TECHNICAL SPECIALTIES

Review and assessment of cost related to investigation and remediation of contaminated sites, including classification of costs incurred, projection of future costs and allocation of costs based on date, source and/or responsible party. Have reviewed and classified over \$10 billion in costs incurred for the investigation and remediation of contaminated sites nationwide, including over 1,000 former manufactured gas plants (MGPs). Consulting on major petroleum releases (including dilbit) from pipelines and train derailments. Management and oversight of remediation projects involving soil and ground-water contamination; remediation of chemical, petroleum, asbestos, and PCB contamination at factories, refineries, gas stations, hospitals, and commercial properties; performance of field activities, and selection/oversight of contractors. Assist in preparation and review of Natural Resource Damage Assessments (NRDA)

EXPERIENCE SUMMARY

Thirty-seven years in environmental assessment, remediation, and risk management; twenty years in environmental dispute investigation and management, including cost containment, liability assessment, dispute resolution, settlement negotiations and expert witness services. Vice President and Principal Engineer for Roux Associates, Inc. (1999-present), Environmental Engineer for Rimkus Consulting Group (1995-1999), Manager of Environmental Services for AIG Consultants, Inc. (1987-1995), Environmental Engineer for Ecology and Environment, Inc. (1985-1987).

CREDENTIALS

B.S. – Chemical Engineering – Rose-Hulman Institute of Technology, 1983

Registered Professional Engineer – Illinois

40-Hour OSHA Hazwoper Training

40-Hour Asbestos Inspector/Project Manager Training

PROFESSIONAL AFFILIATIONS

American Institute of Chemical Engineers (AIChE)

American Society of Testing Materials (ASTM),
(member of ASTM Committee E-50, which is responsible for generation of standards and guidelines for Environmental Assessment, Risk Management and Corrective Action and Committee F20 on Hazardous Substances and Oil Spill Response.)

Association Advancement of Cost Engineering (AACE)

SPEAKING ENGAGEMENTS

- Chicago Bar Association (CBA). Allocation of Economic Damages in Environmental Cost Recovery Cases. October 2012.
- Air and Waste Management Association (AWMA). Coal Combustion Residuals (CCR) Impoundment storage and related issues. April 2015.
- Webinar. Will These Sediment Sites Ever Go Away?, An update on where things are at. January 2017.
- AIRROC/ECMA. Update on Sediment and Harbor Sites. September 2017.
- CLM-Bermuda Chapter. The Cost of Catastrophes: A Panel Perspective on Pollution Events. November 2017.
- Society of Environmental Insurance Professionals (SEIP). Solving the Problem of Insuring Pipelines Panel Discussion. June 2018.

TESTIFYING EXPERT

- Review and Classification of Investigation and Remediation Costs: Have been retained as an expert witness to review and classify costs claimed in environmental cost recovery disputes at sites nationwide. Have been retained in cases related to manufactured gas plants (MGP), mining sites, pipeline releases, chemical manufacturing facilities, refineries, landfills and sediment remediation sites. Have reviewed investigation and remediation activities and the associated costs related to sites contaminated with petroleum products, chlorinated solvents, PCBs, dioxin and heavy metals. Have provided testimony regarding both incurred costs and potential future costs at the sites, including the reasonableness and appropriateness of the costs and whether those costs were NCP compliant. Assist in the resolution of cost disputes.
- Cost Allocation: Have been retained as an expert witness on multiple occasions to allocate investigation and remediation costs based on timing, sources and/or responsible party. Opinions have been based on review and analysis of historical documents, including aerial photographs, investigative data, as well as deposition testimony provided in the case. Cases have involved manufacturing facilities, pipeline releases, chemical and petroleum facilities, mining sites and dry cleaners. Have performed allocations on sites contaminated with petroleum products, chlorinated solvents, PCBs, dioxin, and heavy metals. Many cases have involved the use of sophisticated spreadsheets to allocate costs to various time periods or to various sources.
- Defense of Environmental Consultants: Have been retained as an expert witness in the defense of environmental consultants accused of professional errors in the performance of investigation

activities, including due diligence and Phase I investigations for property acquisition. Have rendered opinions regarding the compliance of the consultant's report with standards and guidelines in place at the time that the services were provided.

- Fact witness for insurance carrier in litigation involving a release of trichloroethylene by a tanker truck during a delivery at a manufacturing facility. Provided reports and deposition testimony relating to allocation of extent of contamination to pre-existing versus spill related conditions.

KEY PROJECTS

- Consulting expert for multiple insurance carriers on major environmental releases across North America. These releases include pipeline failures, train derailments, ash pond failures and utility line explosions. Activities involve site inspections, failure analysis review and cost containment activities. Have been involved in pipeline releases of crude oil, bitumen, refined product, and salt brine. Have performed analysis of release timing to determine if the release occurred within a specified discovery period. Assisted in the analysis of NRD claims.
- Cost analysis expert for insurance carriers on multiple claims nationwide. Activities involve review of technical reports and correlation of claimed costs with site activities. Have reviewed over \$5 billion in invoices and generated reports placing costs into categories as defined by counsel. Typical categories include investigation, remediation, on-site, off-site, undocumented and costs unrelated to the environmental activities at the site. These projects have been performed in both a consulting and expert testimony capacity.
- Consulting expert for insurance carriers in settlement negotiations in claims related to over 1,000 individual manufactured gas plant (MGP) sites nationwide, including joint retention by carriers and policyholders. Provided expert reports and assisted in settlement negotiations. Provided independent estimates of future costs analysis of potential natural resource damage claims and opinions on the appropriateness of past expenditures.
- Consulting expert for insurance carriers in settlement negotiations relating to over 40 landfills nationwide, approximately 10% of which were in Illinois. Provided expert reports and consultations regarding future remediation costs, timing of releases, quantification of natural resource damage claims and appropriateness of past expenditures.
- Provided claims investigation services related to coal tar release to a navigable waterway in Chicago, Illinois. Conducted investigation into cause of release, specifically determining if release was due to an explosion or a mechanical failure. Provided cost

containment services related to oversight of remediation activities.

- Provided claims investigation services related to a fire at a tire recycling facility in Illinois. Conducted an on-site investigation related to the cause of the fire, appropriateness of response activities and allocation of costs to first versus third-party claims.
- Assisted insurance claims adjusters in handling of environmental claims in over 1,000 cases nationwide. Claims involved; UST releases, transportation related releases, heating oil claims and contamination at industrial facilities. Provided assistance in hiring of remediation contractors, investigation of cause and origin and providing opinions regarding timing of releases.

Project Management

- Provided on-site management of decommissioning of steel manufacturing facility in Midwest. Activities included cleansing of PCB contaminated equipment and structural steel, design, and operation of wastewater treatment system for remediation generated wastewaters and oversight of asbestos abatement activities.
- Provided on-site project management for decommissioning and demolition of manufacturing facility in the Midwest. Activities included removal of hazardous materials, UST removal, transformer removal, and asbestos abatement.
- Provided project management for UST program for mechanic contractor facilities nationwide. Responsibilities included hiring of tank removal contractors, negotiations with regulatory agencies and reimbursement from state UST funds.
- Completed PRP allocation project at Superfund site in Midwest for USEPA. Activities included review of waste-in documents including loading tickets and invoices. Determined PRP allocations based upon waste-in volume and toxicity of materials received.
- Performed environmental assessments of commercial and industrial facilities across the country in support of property transfers or mergers of companies.
- Conducted on-site investigations of over 300 industrial and waste management facilities nationwide in support of environmental liability insurance applications. Provided opinions related to the environmental risks posed by the facilities and prepared recommendations to reduce the potential liabilities.
- Project Manager for investigation and management of environmental insurance claims, including cost containment, liability assessment, and settlement negotiations. Investigation and remediation of chemical and petroleum contamination of soils and ground water.

- Environmental Manager of a team of professionals in environmental claims investigations, liability assessments, and remediation projects. Specific projects included refinery waste remediation, underground storage tank removal, Phase I and II real estate assessment, and liability assessments of industrial facilities.
- Chemical Engineer responsible for field activities relating to remediation of soil, ground water, and asbestos contamination of industrial facilities. Specific projects included decommissioning/decontamination of industrial facilities, SPCC (spill prevention control and contingency) plan preparation, and design/implementation of site investigations. Included work for USEPA and Illinois EPA on projects related to Dead Creek in Sauget, Illinois and Kerr McGee in West Chicago, Illinois.
- Chemical Engineer responsible for chemical and material analysis for metal finishing and steel manufacturing industry clients. Specific projects included waste minimization studies, wastewater treatment design, process control, and corrosion studies.
- Piping Engineer working at nuclear power plants in Illinois and Indiana as a piping and pipe support as-built engineer. Responsible for survey and redesign of pipe systems and pipe supports for both nuclear and non-nuclear related piping.

EXPERT WITNESS TESTIMONY

- Curtiss-Wright Corporation V. Aetna (1998), Superior Court of New Jersey (Bergen County). Expert Report and Deposition, settled prior to trial.
- Central Maine Power v. Earnest A Moore (1999), Superior Court of Maine (Augusta). Expert Report and Deposition, settled prior to trial.
- Consumers Energy Company v. Certain Underwriters at Lloyd's London, et al (2000), U.S. District Court Eastern District of Michigan. Expert Report and Deposition, testimony at binding arbitration.
- Crucible Materials Corporation v. Aetna (2000), Federal Court (Northern District of New York). Expert Report, Deposition.
- Jostens, Inc. v. Federated Mutual Insurance Co., et al. (2001), Ramsey County (MN) District Court. Expert Report, Deposition, settled prior to trial.
- Liberty Mutual Insurance Company v. The Black & Decker Corporation et al. (2003), U.S. District Court District of Massachusetts. Expert Report, Deposition, Trial consulting.
- The Mead Corporation v. The Aetna Casualty and Surety Company; et al. (2003), Circuit Court for Jefferson County, Alabama. Expert Report, Deposition, settled prior to trial.
- State of California v Underwriters at Lloyds' et al (2004), Superior Court of California, County of Riverside. Expert Report, Deposition, Settled.
- USFG and Continental Insurance v. Soco West, Inc. (2005), United States District Court for District of Montana. Expert Report, Deposition, Trial consulting.
- Keystone Consolidated Industries, Inc. v. Employers Mutual Liability Insurance of Company of Wisconsin (2005), United States District Court Central District of Illinois. Expert Report, Deposition, settled prior to trial.
- Mather Investment v Illinois Trapshooters, et. al. (2006), Seventh Judicial Circuit Sangamon County, Illinois. Deposition, settled prior to trial.
- State of Wisconsin v. Hydrite Chemical Company v. Aetna Casualty and Surety Company (2006), Dane County, Wisconsin Circuit Court. Expert Report, Deposition, settled prior to trial.
- Suburban Propane v. St Paul Travelers Insurance Company and Insurance Company of North America (2009), Superior Law Court of New Jersey Law Division Morris County. Expert Report, settled prior to trial.
- Paper Services, Ltd. V. Algonquin Power Systems New Hampshire, Inc. et al (2010), State of New Hampshire Cheshire County Superior Court. Expert Report, Settled Prior to Trial.
- General Electric Company v. David E.W, Lines, Christopher Hughes and Peter C.B. Mitchell as Joint Liquidators of Electric Mutual Insurance Company Ltd and OneBeacon America Insurance Company (2010), Commonwealth of Massachusetts Suffolk County Superior Court. Expert Report, Deposition, Settled Prior to Trial.
- Merco Group at Aventura Landings V. Tampa Electric Company d/b/a TECO Peoples Gas System as successor in interest to Peoples Gas System, et al, and Continental Holdings, Inc., as successor in interest to Florida Gas Company (2011), Miami Dade (FL) County Court. Expert Report, Deposition, Testimony at trial.
- Ansul, et al. v. Employers Insurance Company of Wausau, et al. (2011), Circuit Court of Marinette County, Wisconsin. Expert Report, Settled Prior to trial.
- Soo Line Railroad v. Certain Underwriters at Lloyd's, Binding Arbitration before Three Judge Panel, Minneapolis, MN (2011). Expert Report and Testimony at arbitration.
- BLOOMTEX ASSOCIATES, II, L.P., Plaintiff, vs. PARK PLUS, INC., Defendant (2011), Superior Court of New Jersey Law Division-Civil Part Essex County. Expert Report, Settled Prior to Trial.

- Bank of New York, et. al (Plaintiffs) v Morgan Stanley (Defendant) (2012), United States District Court, Southern District of NY. Expert Report, Deposition, Case Settled.
- Crown Cork & Seal, et al. v. Continental Holdings, Inc. Jams Arbitration (2012). Expert Report, Deposition and Testimony at binding arbitration.
- Commission, Indiana Department of Environmental Management, v. Ertl Manufacturing, Inc. On behalf of Intervener Threaded Rod (2013), Marion County (IN) Superior Court. Affidavit, Testimony at Hearing.
- City of Canton, Illinois, (Petitioner) v. Navistar, Inc. (Respondent) (2013), American Arbitration Association-Commercial Division Case No. 1-125-1528-09. Expert Report, Deposition, Testimony at Arbitration.
- Tennessee Valley Authority, (Claimant) v. Zurich Insurance Company-Bermuda Branch (Respondent) (2014), Arbitration Act 1996-London, UK. Expert Report, Testimony at London Arbitration.
- Rogers Cartage Co., et al. (Plaintiffs) v. Travelers Indemnity Co., et al. (Defendants) (2014), Circuit Court of St. Clair County, Illinois. Affidavit.
- Micron Technology (Plaintiffs) v. Safway Services, LLC., et al. (Defendants) (2014), Circuit Court for Alexandria, Virginia. Expert Report, Deposition, Settled Prior to Trial.
- Employers Insurance Company of Wausau (f/k/a Employers Insurance of Wausau, a mutual company, et al.) (Plaintiffs) v. Klinke Clothing Care Corporation, d/b/a Klinke Cleaners, et al., (2014), State of Wisconsin Circuit Court for Waukesha County. Expert Report, Settled Prior to Trial.
- Endurance US Insurance as subrogee of J&H Oil Company and J & H Oil Company, Individually (Plaintiffs) v. R.W. Mercer Co., (Defendants). (2015), State of Michigan Circuit Court for County of Kent Case No. 14-03668-NZB. Expert Report, Testimony at Trial.
- General Casualty Company of Wisconsin and Regent Insurance Company (Plaintiffs) v. Robin, Inc. and Ray Gehrig (Defendants and Third-party Plaintiffs) v. Century Indemnity Company (Third-Party Defendant). (2015), State of Wisconsin Circuit Court for Rock County Case No. 12-CV-1381. Expert Report, Deposition, Case Settled Prior to Trial.
- Enterprise Products Operating LLC f/k/a Enterprise Products Operating L.P. and Enterprise TE Products Pipeline Company LLC f/k/a TE Products Pipelines Company LLC, (Plaintiffs) v. Troy Construction, LLC and Wood Group Mustang, Inc. f/k/a Mustang Engineering, LP, (Defendants). (2015), District Court of Harris County, Texas 190th Judicial District (Cause No. 2013-37649). Expert Report, Deposition, Case Settled Prior to Trial.
- The City of Jacksonville (Plaintiff) v. Shoppes of Lakeside, Inc., Jacksonville Hospitality Holdings, L.P., Continental Holdings, Inc. (Defendants). (2016), United States District Court, Middle District of Florida, Jacksonville Division (Case No. 3:12-CV-850-J-25MCR). Expert Report, Deposition, Case Pending.
- Enbridge, Inc., Enbridge Energy Limited Partnership, (Claimants) v. AIG Insurance Company of Canada (Respondent) (2016), Arbitration Act 1996-London, UK. Expert Report, Testimony at London Arbitration.
- Denbury Resources, Inc. and Denbury Onshore, LLC. (Plaintiffs) v. Ironshore Specialty Insurance Company, Alterra Excess & Surplus Insurance Company and Marsh USA, Inc. (Claimants). District Court of Harris County, Texas, 157th Judicial District. Expert Report, Case Pending.
- Certain Underwriters at Lloyd's London, et al., (Plaintiffs) vs. United States Steel Corporation, et al., (Defendants). Court of Common Pleas of Allegheny County Commonwealth of Pennsylvania. Expert Report, Deposition, Case Pending.
- Landis+Gyr, Inc. (Plaintiff) vs. Zurich American Insurance Company (Defendant). United States District Court Northern District of Indiana Lafayette Division. Expert Report, Case Settled Prior to Trial.
- Butterball, LLC (Plaintiff) vs. Great American E&S Insurance Company (Defendant). United States District Court for the Western District of Missouri Southwestern Division. Expert Report, Settled Prior to Trial
- Murry Haber, et.al. (Plaintiffs) vs. Bakers Standard Insurance Company (Defendant). United States District Court, District of Connecticut. Expert Report, Deposition, Settled Prior to Trail.
- James Wischmeyer (Plaintiff) v. Petrochoice, LLC (Defendant). Circuit Court for Lake County, Illinois. Expert Report, Deposition, Case Pending.