

**Gary N. Bigham, L.G.**  
**Principal**

**Professional Profile**

Mr. Gary Bigham is a Principal in Exponent's Environmental Sciences practice who specializes in the evaluation of transport, fate, and effects of contaminants in aquatic habitats, soil, sediment, and groundwater. He has managed and been the principal investigator of field, laboratory, and theoretical assessments of a wide variety of contaminants in lakes, rivers, estuarine waters, ocean waters, and groundwater. Mr. Bigham has also directed RI/FSs, human health and ecological risk assessments, cost allocation studies, and NRDA's for sites involving soils, sediments, and waters contaminated with arsenic, chlorinated benzenes, dioxin, mercury, metals, PAHs, PCBs, petroleum hydrocarbons, and solvents. He has also completed several evaluations of mercury in indoor air. Recent examples of contaminant transport and fate analyses include the development of a numerical model of mercury cycling and bioaccumulation for Onondaga Lake; a detailed evaluation and modification of sediment transport and PCB bioaccumulation models for the Fox River and Green Bay, Wisconsin; and an evaluation of the effects of eutrophication on mercury bioaccumulation in the Florida Everglades. Mr. Bigham is the author of numerous publications on the behavior of mercury in the environment.

Mr. Bigham has been designated an expert witness in class action and individual tort claims on the issue of PCB and PAH transport in streams and rivers, and dioxins/furans in a lake; in litigation involving mercury bioaccumulation in the Florida Everglades; and assessments of exposure to mercury vapor, crude oil, and produced water. Mr. Bigham has also completed environmental forensic investigations of mercury-contaminated sediments and soil, groundwater contaminated with chlorinated solvents and petroleum hydrocarbons, and for allocation of remediation costs of a PAH-contaminated sediment site in Boston Harbor. He has also had a lead role in NRDA's related to mercury contamination in surface waters and involving solvents in groundwater. He has also served as a consulting expert on a major NRD claim involving confined animal feeding operations (CAFOs) in Oklahoma and Arkansas.

Mr. Bigham's international experience includes serving as resident manager for a multi-year air quality and marine environmental monitoring program in Saudi Arabia. He led the technical development of a natural resource damage claim for the Kingdom of Jordan to the United Nations Compensation Commission for damages arising from the first Gulf War. He recently completed an environmental assessment for a major oil export facility in Abu Dhabi and evaluated potential human exposure to spilled oil and produced-water discharges in the Amazon basin of Ecuador. He applied a water quality model to predict conditions in and downstream of a proposed reservoir in Bolivia and assessed water quality and greenhouse gas emissions for a proposed reservoir in Guyana. He has also completed an assessment of potential human exposure to mercury vapor from a spill in the Peruvian highlands.

## **Academic Credentials and Professional Honors**

Post-graduate course work in Environmental Engineering, University of Southern California, 1975–1976

M.S., Geophysical Sciences, Georgia Institute of Technology, 1972

B.S., Geology, Oregon State University, 1968

## **Licenses and Certifications**

Licensed Geologist, Washington, #1303

Hazardous Waste Operations Management and Supervisor 8-hour training program

## **Publications**

Bigham G, Law S. Agriculture meets Natural Resource Damage claims. Agricultural Management Committee Newsletter, American Bar Association, August 2009.

Bigham G, Chan W, Dekermenjian M, Reza A. Indoor concentrations of mercury vapor following various spill scenarios. *Environmental Forensics* 2008; 9(2):187–196.

Chan W, Bigham G, Dekermenjian M. Exposure to elemental mercury from a spill. In: Abstracts—11th International Conference on Indoor Air Quality and Climate, Copenhagen, Denmark, August 17–22, 2008.

Bigham G, Gard N, Drury D. Assessment of natural resource damages at the New Almaden mercury mining district, California. In: Abstracts—8<sup>th</sup> International Conference on Mercury as a Global Pollutant, Madison, WI, August 6–11, 2006.

Bigham GN, Henry B, Bessinger B. Mercury. In: *Environmental Forensics, Contaminant Specific Guide*. Morrison RD and Murphy BL (eds), Academic Press, 2006.

Bigham G, Henry B, Bessinger B. Mercury—A tale of two toxins. *Natural Resources & Environment*, American Bar Association 2005; 19(4).

Mackay CE, Colton JE, Bigham G. Structuring population-based ecological risk assessments in a dynamic landscape. In: *Coastal and Estuarine Risk Assessment*. Newman MC, Roberts Jr. MH, and Hale RC (eds), Lewis Publishers, Boca Raton, FL, 2002.

Bigham GN, Vandal GM. A drainage basin perspective of mercury transport and bioaccumulation: Onondaga Lake, New York. *Neurotoxicology* 1996; 17(1):279–290.

Becker DS, Bigham GN. Distribution of mercury in the aquatic food web of Onondaga Lake. *Water Air and Soil Pollution* 1995; 80:563–571.

Becker DS, Rose CD, Bigham GN. Comparison of the 10-day freshwater sediment toxicity tests using *Hyalella azteca* and *Chironomus tentans*. *Environmental Toxicology and Chemistry* 1995; 4(12):2089–2094.

Henry EA, Dodge-Murphy LJ, Bigham GN, Klein SM. Modeling the transport and fate of mercury in an urban lake (Onondaga Lake, NY). *Water Air and Soil Pollution* 1995; 80:489–498.

Henry EA, Dodge-Murphy LJ, Bigham GN, Klein SM, Gilmour CC. Total mercury and methylmercury mass balance in an alkaline, hypereutrophic urban lake (Onondaga Lake, NY). *Water Air and Soil Pollution* 1995; 80:509–518.

Bigham GN. Oceanic disposal of waste from manganese nodule processing. In: *Oceanic Processes in Marine Pollution, Volume 3, Marine Waste Management—Science and Policy*. Champ MA and Park DK (eds), Robert E. Krieger Publishing Company, Malabar, FL, 1989.

Bigham GN. Zone of influence, inner continental shelf of Georgia. *Journal of Sediment Petrol* 1973; 31(1):207–21.

### **Prior Experience**

Vice President, PTI Environmental Services, 1987–1997  
Senior Scientist, Tetra Tech, Inc., 1974–1987  
Environmental Scientist, U.S. Army Corps of Engineers, 1972–1974

### **Project Experience**

#### ***Contaminant Transport and Fate***

Evaluated the transport and fate of spilled oil and produced water alleged in a toxic tort claim related to oil exploration and production from the Sacha field in the Amazon basin region of Ecuador and provided an expert report for ChevronTexaco.

Evaluated the transport and deposition of PCB-contaminated sediment in a Kentucky river system and provided expert jury-trial testimony for Rockwell International.

Prepared an expert report in a property damage case in Brunswick, Georgia, regarding deposition of mercury and PCBs on intertidal and riparian properties.

Prepared an expert report and provided expert hearing testimony in a class-action property damage case regarding the transport of PCB-contaminated sediment in a stream system at Rome, Georgia, for General Electric.

Prepared an expert report in a property damage case regarding transport of PCB-contaminated stormwater runoff onto a property in Rome, Georgia, for General Electric.

Selected by SERDP (U.S. Department of Defense's Strategic Environmental Research and Development Program) in 2005 to review research grant proposals on "Assessment and Measurement of Processes Impacting the Fate and Transport of Contaminants in Sediments," and in 2006, to review proposals on "Ecosystem Risk and Recovery Assessment for Contaminated Sediments."

Managed an ecological risk assessment and potential natural resource assessment for Honeywell at a tidal marsh in Georgia contaminated by mercury, PCBs, and other substances. The project included a detailed evaluation of mercury species and PCB congeners in sediment, water, and biota, as well as food-web modeling of ecological effects.

Assisted in the design and implementation of field data collection and field experimentation to predict water quality for an open-pit mine in Indonesia.

Provided an analysis of the long-term effects of drilling-mud deposits from offshore oil exploration and production platforms in southern California.

Conducted a program for measuring sediment oxygen demand in Great South Bay, New York, and developed input for a numerical water quality model.

Developed a simple leach-test procedure to evaluate the water quality effects of dredged material disposal. Procedure was adopted as a standard test by the U.S. Army Corps of Engineers and EPA.

Assisted in developing a laboratory selective leaching procedure for the U.S. Army Corps of Engineers to determine how metals are bound to contaminated sediments.

Served as project manager to provide technical support regarding transport, fate, and effects of PCBs for a contractor at a dredging site on the St. Lawrence River at Massena, New York.

Served as project manager to develop a method to predict concentrations of bacteria and suspended sediments at a site within Grays Harbor, Washington, resulting from dredged material disposal at the Point Chehalis disposal site for the U.S. Army Corps of Engineers.

Served as project manager for a critical review of projected risks of spilled oil to the southern sea otter population in California for an oil and gas company.

Managed an analysis of the wave propagation and flushing characteristics of a marina in Puget Sound, Washington. Project included physical modeling and field verification.

Performed stream gauging, determined river-aquifer exchange, and collected historical surface and groundwater data along the Rockaway River, New Jersey.

## ***Environmental Assessment***

Performed an evaluation of potential impacts of dredging and related modifications to a container port facility in Buenos Aires, Argentina.

Project manager for an environmental impact assessment for modifications of oil storage facilities at the major oil export terminal at Abu Dhabi, UAE.

Project manager for the investigation of potential dredged material disposal sites within San Francisco Bay, California.

Developed approach and managed the preparation of a draft and final EIS for the National Science Foundation–funded Deep Ocean Drilling Program.

Served as project manager to provide shipboard and technical support to EPA's ocean dumping program. Prepared ocean dumping site designation reports, and developed a QA/QC program for marine sample collection and shipboard and shore-based analyses.

Served as project manager for planning, design, and construction supervision of a marina and related facilities in Tulalip Bay, Washington. Prepared an environmental assessment, and provided permitting support.

Served as project manager for a precision bathymetric survey and the production of bathymetric maps of Boca de Quadra Fjord near Ketchikan, Alaska.

Served as resident manager in Jubail, Saudi Arabia, for an extensive environmental baseline survey. Program included air quality monitoring, marine biological and physical oceanographic surveys, and sediment transport studies.

Performed a preliminary siting survey for a single-point mooring oil terminal on the southern coast of Oman.

Evaluated effluent characteristics and water quality effects of a major oil and gas gathering project in the Arabian Gulf.

Served as assistant project manager of an EIS for a major beach restoration project along the south shore of Long Island, New York. Project involved placing sand dredged from offshore onto the beach.

Performed an analysis of the potential impacts of a proposed single-point mooring oil terminal facility off Morro Bay, California.

Served as contract manager for a marine environmental investigation of the effects of major improvements to the Los Angeles/Long Beach Harbor, California.

## *Environmental Forensics*

Prepared an expert report and provided deposition testimony regarding the extent of contamination and need for remediation at a former chemical manufacturing site near Tacoma, Washington. The project involved review of past manufacturing and waste disposal practices and evaluation of chemical analyses of soil and groundwater data. Degradation of chlorinated and petroleum hydrocarbons in groundwater and groundwater velocities were also evaluated.

Prepared a report on behalf of BP/ARCO and provided deposition testimony in support of a motion to dismiss in a toxic tort claim. The claim involved alleged damages related to vapor intrusion from comingled PCE, TCE, and petroleum hydrocarbon groundwater plumes. The objective of the report was to determine the timing of a release of petroleum hydrocarbons from a wholesale distribution site and whether the plume had reached the plaintiffs' property.

Prepared an expert report and provided deposition testimony in opposition to class certification regarding the sources, transport, and deposition of sediment and associated dioxins and furans in Lake Sam Rayburn, Texas, on behalf of defendants International Paper and Abitibi.

Prepared an expert report regarding the sources, transport, and deposition of contaminated sediments and the chemical fate of associated PCB, PAH, and metals in a small stream in Brockport, New York, for General Electric.

Prepared an expert report on behalf of BP/ARCO regarding the nature of contamination at a former bulk fuel distribution site in Pomona, California. Weathered gasoline and diesel fuel were present on the site along with PCE. One source of PCE to the vadose zone was determined to be a nearby solvent wholesaler site.

Prepared an expert report on behalf of BP/ARCO evaluating the potential contamination of a municipal supply well in Norwalk, California, with 1,1-DCA by near-surface releases from a service station.

Performed field research of circulation patterns on the inner continental shelf of Georgia by using suspended and deposited clay minerals as tracers.

Prepared a historical sedimentation and fate analysis in allocation mediation among three companies for remediation costs of PAH-contaminated sediments at a site in Boston Harbor. Conducted an environmental forensics investigation of the timing and nature of transport and deposition of wastes from coke, coal tar, and manufactured gas plants.

Managed the development of a risk-based cost allocation method to allocate remediation costs at a commercial landfill site in the New Jersey Pine Barrens. Also conducted an environmental forensics investigation to determine the sources of onsite contaminants.

## *Mercury*

Developed estimates of mercury vapor emission rate associated with the ordered removal of brine mud landfills at a former mercury-cell chlor-alkali plant on the Penobscot River in Maine. The emission rates were back-calculated, using AERMOD, from measured vapor emissions from similar material during remediation at another chlor-alkali plant.

Performed a survey of mercury concentrations in indoor air and soil vapor at a chemical facility in Canton, Ohio.

Evaluated potential exposure to mercury vapor related to a spill of elemental mercury over 40 km of highway in the Peruvian highlands. Exposure occurred when residents took the mercury home. The project included construction of a room similar to a rural Peruvian home and measuring mercury vapor concentrations in the room following a controlled mercury release. The results were used to verify a mathematical mercury evaporation and exposure model. Also evaluated mercury in urine data to corroborate model results.

Performed a reconnaissance of the Almaden Quicksilver County Park on behalf of the Santa Clara County Parks and Recreation Department to identify sites of soil erosion. The areas were prioritized according to their potential contribution of sediment and mercury to the Guadalupe River system.

Prepared comments on behalf of the Santa Clara Parks and Recreation Department on the Guadalupe River Mercury TMDL report.

Prepared an expert report in defense of a class action claim against a natural gas utility for mercury exposure related to removal of gas pressure regulators. The work included evaluation of regulator removal procedures and estimation of the potential short- and long-term mercury exposure in indoor air.

Prepared and submitted comments on the TMDL report for mercury in San Francisco Bay on behalf of the Santa Clara Valley Water District.

Provided review and comment of a TMDL for mercury in the Guadalupe River prepared by a contractor for the Santa Clara Valley Water District.

Project manager for a cooperative Natural Resource Damage Assessment for the Guadalupe River Basin that drains the former Almaden Mercury Mining District near San Jose, California. Work also included additional sampling, analyses, and interpretation of mercury data for various media.

Project manager for evaluation of factors that influence bioaccumulation of mercury and other contaminants in fishes for the Michigan DEQ. Also recommended parameters to include in fish monitoring programs. The objective was to ensure that all appropriate parameters needed to identify the cause of long-term trends are measured.

Provided comments for Westinghouse Savannah River Laboratory on the draft TMDL for mercury in the Savannah River developed by U.S. EPA Region 4.

Designated as an expert witness in standard-of-care litigation involving a consulting engineering firm's clean up of a mercury-contaminated building.

Member of a panel of mercury experts to evaluate mercury behavior, bioaccumulation, and remedies at South River, a tributary of the Shenandoah River, Virginia, for DuPont and the VADEQ.

Project manager for evaluation of the behavior, effects, and remediation of elemental mercury spilled in homes from gas pressure regulators in Detroit, Michigan.

Project manager for evaluation of mercury toxicity and treatability in petroleum industry effluents for the American Petroleum Institute. Project also included a separate evaluation of reported mercury concentration data in crude oil.

Managed a project designed to evaluate mercury cycling and bioaccumulation in fresh and estuarine waters to help guide future investigations for the Aluminum Company of America.

Expert witness on the issue of the relationship between mercury bioaccumulation in aquatic food webs and the degree of eutrophication in the south Florida Water Conservation Areas and the Everglades.

### ***Natural Resource Damage Assessment***

Served as a consulting expert for a first-of-its-kind NRD claim involving confined animal feeding operations (CAFOs) in Oklahoma and Arkansas. Evaluated animal waste and soil chemical data along with information in nutrient management plans. Evaluated transport of contaminants by stormwater runoff and potential water quality effects on downstream surface waters and a reservoir. Developed a comprehensive web-based compilation of reports and data linked to a GIS map of relevant locations.

Prepared a preliminary estimate of potential natural resources damage liability for a chemical facility in Delaware. Potential damages were related to solvents in groundwater, surface water, and tidal wetlands.

Prepared an expert report and provided deposition testimony regarding delineation of a PCE groundwater plume and associated natural resource damages at a former manufacturing facility in North Brunswick, New Jersey.

Project manager for a cooperative Natural Resource Damage Assessment for the Guadalupe River Basin that drains the former Almaden Mercury Mining District near San Jose, California. Project included development of a Habitat Equivalency Analysis and negotiation of restoration with resource trustees.

Performed a preliminary Habitat Equivalency Analysis of natural resource damages related to mercury contamination of Onondaga Lake, New York.

Project manager to provide an evaluation of a Natural Resource Damage Assessment prepared by the State of New Jersey for a landfill site. Evaluated injuries to fisheries, groundwater, and wetlands and prepared alternative assessment. Project also included development of restoration alternatives.

Developed the technical claim to the United Nations Compensation Commission on behalf of the Kingdom of Jordan for environmental damages to water resources incurred during the Gulf War. Also developed a claim and work plan for monitoring and assessment to further quantify damages.

Directed a preliminary natural resource damage evaluation for a complex aquatic system in Montana affected by mining wastes.

### ***NPDES Permitting***

Prepared an expert report regarding compliance of the City and County of Honolulu's Sand Island and Honouliuli municipal sewage treatment plants with terms of their NPDES discharge permits and Section 301(h) waivers from the requirements of secondary treatment. Also addressed the appropriateness of the City and County's applications for NPDES permit and Section 301(h) waiver renewals.

Served as resident manager for a numerical water quality modeling study of the effects of municipal wastewater discharges to all the bays around Long Island, New York.

Served as project manager and technical director to evaluate the fate and effects of submarine tailings disposal to a fjord in southeastern Alaska, for EPA's evaluation of an NPDES discharge permit.

Managed and performed an EPA field evaluation of the effects of fish processing waste disposal on marine waters and sediment at a site in the Aleutian Islands, Alaska.

Managed an investigation for two fish processing companies to support a request to EPA and the State of Alaska for continued discharge of fish processing waste at a site in the Aleutian Islands, Alaska.

### ***Remedial Investigations/Feasibility Studies***

Performed an evaluation of potential liability for a multinational manufacturing company related to past offsite disposal of hazardous wastes at facilities worldwide.

Managed a major RI/FS and natural resource damage investigation at Onondaga Lake, New York, for AlliedSignal Inc., to evaluate impacts of historical discharges from soda ash and mercury cell chlor-alkali plants. Project includes modeling mercury cycling and

bioaccumulation in the lake and assessing the toxicity of a variety of contaminants in sediments. Results of the modeling and human health and ecological risk assessments will be used to select effective remedies.

Directed an evaluation of human health and ecological risks at the Butte and Anaconda, Montana, mining and smelting sites. Project included preparing risk assessment scoping documents for several operable units where arsenic, cadmium, and lead were the primary contaminants of concern. Also conducted in-depth research on the bioavailability of soil contaminants to demonstrate the reduced risk posed by mining-waste-related soils.

Provided deposition testimony for Shell Oil Company regarding the identification of wastes disposed of at Lowry Landfill (Colorado) as hazardous.

Project director of an RI/FS for the Smelter Hill operable unit of the Anaconda Smelter site in Anaconda, Montana. Investigations involved collecting more than 10,000 soil samples and evaluating soil phytotoxicity, human health risks, and contaminant transport in air and groundwater.

Project manager for technical litigation support related to a Superfund site near Kent, Washington. Project included evaluating organic and inorganic contaminant migration from the site to adjacent property via groundwater and air for a law firm representing two PRPs.

Managed an investigation of the extent of contamination at an industrial site near Grays Harbor, Washington, for a party interested in acquiring the site. Investigation included assessing soil, surface water, and groundwater contamination related to an abandoned municipal landfill, a truck maintenance shop, a wood waste landfill, and a log sort yard. Estimated cleanup costs and initiated soil removal.

Managed development of the work plan of a major historical mining district for the Butte, Montana, Superfund site RI/FS.

Project director to develop a work plan for the Bunker Hill, Idaho, Superfund site RI/FS. The 21-mi<sup>2</sup> site contains mill tailings and lead and zinc processing wastes.

Managed a Phase I RI/FS at a Superfund site in Anaconda, Montana. This complex site contains a wide variety of copper smelting and sulfide ore processing wastes, including approximately 7 mi<sup>2</sup> of impounded mill tailings.

Managed a remedial investigation examining the human health effects of arsenic-contaminated soils and potential remedial actions for Mill Creek, Montana, a small community adjacent to a Montana Superfund site.

## *Water Quality Modeling*

Prepared a water quality evaluation of the proposed Amaila Falls Reservoir in Guyana on behalf of the project developer. Applied the water quality model CE Qual W2 to simulate water quality in the reservoir and downstream. A particular focus of the study was evaluation of greenhouse gases emitted by the pre-reservoir tropical river compared to emission from the reservoir.

Performed a modeling study to evaluate the behavior of discharge plumes from methane extraction facility on the stability of Lake Kivu, Rwanda. Utilized the Computational Fluid Dynamics code to determine the depth of plume stratification. Also evaluated water quality impacts of the wash water discharge on near surface waters.

Prepared a water quality evaluation for the proposed Misicuni Reservoir in Bolivia on behalf of the Inter-American Development Bank. Applied the coupled DYRESM-CAEDYM hydrodynamic and water quality models to predict water quality in the reservoir. Also applied the biogeochemical model PHREEQC to evaluate the release of contaminants from sediments under anaerobic conditions.

Prepared a risk evaluation of mineral oil spilled from a transformer at a hydroelectric dam in western Montana for submittal to EPA Region 8. The evaluation included estimation of the spill rate and transport and dilution, which were compared to anecdotal observations of oil sheen. Special attention was given to the fate of the PCBs contained in the mineral oil.

Managed an evaluation for NCR of sediment transport, water quality, and food-web models applied to PCB-contaminated sediments in the Fox River and Green Bay, Wisconsin, for a potential natural resource damage claim. Also participated on a state-industry work group to evaluate and modify applicable models.

Developed a method to allocate costs to remediate PCB-contaminated sediments in the Fox River, Wisconsin. The method was based on results of a sediment transport model.

Managed and directed technical analysis of legal, technological, and environmental factors related to future ocean disposal of manganese nodule processing wastes for NOAA. Project included development of a simplified waste dispersion model for screening of potential ocean dump sites.

Performed an analysis of oil spill trajectories in the Santa Barbara Channel, California, for an oil company.

Served as project manager and technical director for portions of EPA's evaluation of the fate and effects of drilling muds and cuttings in Alaska's marine waters. Applied the Offshore Operators Committee model to simulate dispersion of the plume.

Served as project manager for an analysis of the fate of drilling mud and cuttings discharges to the Beaufort Sea for two oil companies. Applied the Offshore Operators Committee model to simulate dispersion of the plume.

Served as project manager and technical director for portions of EPA's evaluation of the fate and effects of drilling muds and cuttings in Alaska's marine waters.

Served as project manager for an analysis of the fate of drilling mud and cuttings discharges to the Beaufort Sea for two oil companies.

Performed analyses of the fate and effects on water quality of municipal sewage discharge plumes to marine waters of the U.S. West Coast and Puerto Rico and evaluated compliance with water quality criteria as part of EPA's evaluation of applications, nationwide, for Section 301(h) waivers from the requirement of secondary treatment.

Managed a numerical water quality evaluation and field verification study for a harbor development project in Saudi Arabia. Performed bathymetric surveys and dye dispersion tests. Measured tides, currents, and alongshore sediment transport.

Served as resident manager of water quality modeling studies of all of the bays around Long Island, New York. The purpose of the studies was to determine the optimum location for municipal sewage outfalls as part of a long-term regional (Section 208) planning program.

### **Professional Affiliations**

- American Chemical Society
- Geological Society of America
- International Society of Environmental Forensics
- Society of Environmental Toxicology and Chemistry
- Associate Member, American Bar Association

### **Deposition/Trial Testimony**

*Maine Department of Environmental Protection v Mallinckrodt*, Maine Board of Environmental Protection, Penobscot County, Maine, January 25–February 4, 2010. Hearing testimony.

*Middlesex Corporation v Phelps*, Superior Court of Washington, Pierce County, Case No. 08-2-05524-3, September 9, 2009. Deposition testimony.

*Huddleston et al., v. Union Pacific Railroad et al.*, Superior Court of the State of California, Contra Costa County, Case NO. C 05 – 02394, March 19, 2009. Deposition testimony.

*New Jersey Department of Environmental Protection (NJDEP) and the Administrator of the New Jersey spill compensation Fund v Parker-Hannifin Corporation*, State Court of New Jersey Docket No.: MID-L-286-06, March 13, 2008. Deposition testimony.

*City of Pomona v ARCO et al.*, U.S. District Court Central District of California, Case No. CV 05 2353 RGK (JTLx), March 27, 2006. Deposition testimony.

*Donald Brophy v Philadelphia Gas Works*, Court of Common Pleas of Philadelphia County, First Judicial District of Pennsylvania, Civil Trial Division, Case No. 07MR05J1, March 7, 2005. Class certification hearing testimony.

*Anderson v. Donahue Industries, Inc., et al.*, 1<sup>st</sup> Judicial District Court, Jasper County, Texas, Case No. 24516, April 13, 2004, Deposition testimony.

*Richard L. Muller Jr. v. General Electric Company*, U.S. District Court Northern District of Georgia, Rome Division, Case No. No. 4:99-CV-294-HLM, May 2002 and March 2004.

*Edwin Watters et al. v. General Electric Company*, U.S. District Court Northern District of Georgia, Rome Division, Case No. 4:98-CV-0195-HLM, July 8, 1999. Class certification hearing testimony.

*Mercer et al. v. Rockwell International*, U.S. District Court, Western District of Kentucky at Bowling Green, Case No. 1:87CV-106-H, September 1997. Jury trial testimony.

*Sugar Cane Growers v. South Florida Water Management District*, U.S. District Court, Southern District of Florida, Case No. 88-1886-CIV-Hoeveler, November 1995.