Biographical Summary

Eric L. Butler, Ph.D., Principal

Dr. Butler is an environmental chemistry expert with over 20 years experience evaluating the source and fate of chemicals in the environment. He has applied chemical fingerprinting techniques, including isotopic methods, in projects involving petroleum hydrocarbons, PAHs, PCBs, dioxins/furans, and solvents. He specializes and has testified on oil chemistry, including PCB oils, the composition of petroleum products, source identification, and the fate of chemicals in the environment. At Gradient, he focuses on designing analytical chemistry programs and litigation support involving forensic chemistry. Dr. Butler has performed and directed numerous chemical analyses using both laboratory and field chemistry techniques. In addition, he has developed an expertise in contemporary archeology ("garbology") to date environmental disposal activities by dating the co-disposed artifacts, and has testified in court on the topic. Before coming to Gradient, he served the US Congress as a Congressional Science Fellow, directed a municipal laboratory specializing in VOC and bacteriological analyses, and directed numerous environmental studies relating to the Exxon Valdez oil spill.

Representative Projects

PCBs in Soils and Sediments: Expert report and testimony on the nature and source of PCBs at a former metal recycling facility. Supported cost allocation analysis for PCBs in river sediments and floodplain, and oversaw data quality assurance of the investigation and remediation of a transformer manufacturing facility.

Dioxin Fingerprinting: Directed and interpreted dioxin fingerprinting analyses. Evaluated source of dioxins in plaintiffs' blood by comparing to dioxin fingerprints of local soil, local emissions, national emissions, and food.

Petroleum Hydrocarbons: Major researcher and author of studies of the water and sediment quality of Prince William Sound following the Exxon Valdez oil spill. The studies encompassed over 3,000 water samples and over 1,000 sediment samples.

Petroleum Hydrocarbon Fingerprinting: Expert reports and testimony for many clients. Used advanced GC/FID and GC/MS hydrocarbon fingerprinting to identify sources of fugitive petroleum products, PAHs, and MGP tars in soils, sediments, and groundwater.

Petroleum Hydrocarbons/Indoor Air: Expert report and testimony regarding the sources of indoor air contaminants in a neighborhood underlain by NAPL.

Forensic Chemistry: Identified sources of chlorinated solvent plumes by compound specific isotope analysis of PCE and TCE in soils and groundwater.

PAH Source Identification: Trial testimony regarding the sources of constituents of interest to a wood-treating site. Designed and implemented an analytical program that demonstrated the presence of non-creosote sources of various PAHs at the site.

Contemporary Archeology: Expert reports and trial testimony on the use of contemporary archeology to date environmental activities (disposal, tank closures, *etc.*) at transportation and manufacturing facilities.

Practice Areas & Expertise

- Environmental Forensics
- Chemical Fingerprinting
- Analytical Methods
- Source Allocation
- TPH, PAH, PCBs, Dioxins, Solvents, & Metals
- Contemporary Archeology

Education

Ph.D., Chemical Oceanography, University of Rhode Island

B.S., Chemistry, Muhlenberg College

Selected Presentations & Publications

Participant in “Environmental Experts: The Keys to Your Case” as expert in Mock Expert Examination presented by the Boston Bar Association, Environmental Section, March 2009.

Butler, EL; Hengemihle, WJ; Brown, ME; Biemer, TS. 2006, 2005. "Better Litigating Through Chemistry." Invited Speaker. Presented to the Philadelphia Bar Association, September 29, 2005. Presented to the Boston Bar Association, October 6, 2005. Presented to the Pittsburgh Bar Association, April 20, 2006.

Butler, EL. 2004. "Exposure and the Age Dating of Chemical Plumes: Organics." Invited Speaker. Presented to Mealey's Water Contamination Conference, Pasadena, CA, January 26-27.

Butler, EL. 2003. "Contemporary Archeology (Garbology) – Use in Dating Environmental Activities: Case Studies." Invited Speaker. Presented to the International Society of Environmental Forensics Workshop, Environmental Forensics: Theory, Application, and Case Studies, Honolulu, HI, April 14-15.

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