

Renee M. Kalmes, M.S.P.H., C.I.H.
Senior Managing Scientist

Professional Profile

Ms. Renee Kalmes is a Senior Managing Scientist in Exponent's Health Sciences Center for Exposure Assessment and Dose Reconstruction. She is a certified industrial hygienist with over 20 years of health risk assessment experience. In this role, she is responsible for designing, conducting, and managing technical studies addressing environmental and occupational impacts of chemical agents. Ms. Kalmes has developed and conducted sampling programs to evaluate potential chemical exposure in air, soil, and groundwater and has prepared over 100 exposure and risk assessment for various properties, including former landfills, industrial, residential, recreational, and agricultural properties and schools, including Brownfields Sites. She has evaluated potential exposure to metals, pesticides, volatile organic chemicals, and petroleum products in soil, groundwater and air and developed clean-up levels and other risk management recommendations. Ms. Kalmes has evaluated soil vapor intrusion issues through use of soil vapor modeling and air monitoring tools. She has communicated risk results to a variety of stakeholders, including neighborhood, worker, and community groups. Ms. Kalmes has taught more than 15 courses on risk assessment at the University of California Extension Program and has developed and conducted more than 100 training programs. Ms. Kalmes frequently interact with local and state regulatory agencies and has testified as an expert in the area of environmental risk assessment as well as beryllium, sulfide, and lead exposure.

Ms. Kalmes specializes in conducting and directing studies to assess potential exposure to consumer products including evaluation of benzene, toluene, lead, cadmium, arsenic, phthalates, ethyl benzene, and formaldehyde. She has developed sampling protocols to evaluate FDA and CPSC and Proposition 65 claims, specifically addressing dermal contact and incidental ingestion of metals associated with hand-to-mouth activities.

Ms. Kalmes has also conducted numerous exposure assessment analyses of community and occupational exposure data for use in cohort and case-control epidemiologic studies. In this role she has designed and managed air sampling programs to evaluate various job classifications to be used in epidemiological studies. She has evaluated community and occupational exposure issues associated with asbestos, beryllium, sulfides, and chlorinated hydrocarbons.

Academic Credentials and Professional Honors

M.S., Air and Industrial Hygiene, University of North Carolina, 1983
B.S., Environmental Science, Purdue University, 1981

Licenses and Certifications

Certified Industrial Hygienist, Comprehensive Practice since 1985

Publications and Presentations

Kalmes R. Effective indoor air sampling and risk communication strategies to address indoor BTEX Levels at former UST site. Presented at American Industrial Hygiene Conference and Exposition, PDC 128, May 2010.

Kalmes R, Hicks J. A method to evaluate lead surface dust concentrations in non-residential settings. Presented at American Industrial Hygiene Conference and Exposition, PDC 138, June 2009.

Kalmes R, Brorby G. Lead, lead everywhere—Evaluating potential exposure to heavy metals in consumer products. Presented at American Industrial Hygiene Conference and Exposition, PDC 192, May 2008.

Kelsh MA, Alexander D, Kalmes R, Buffler P. Personal use of hair dyes and risk of bladder cancer: A meta-analysis of epidemiologic data. *Cancer Causes and Control*, January 2008.

Brorby G, Kalmes R, Goswami E, Mowat F, Sheehan P. Evaluating exposure to consumer products. Presented at Society for Risk Analysis Meeting, December 6, 2006.

Goswami E, Kalmes R. Exposure to formaldehyde during use of nail care products. Presented at American Industrial Hygiene Conference and Exposition, Poster #269, May 2006.

Mandel J, Kelsh M, Mink P, Alexander D, Kalmes R, Weingart M, Yost L, Goodman M. Occupational trichloroethylene exposure and non-Hodgkin's lymphoma: A review and meta-analysis. *Occup Environ Med* 2006, April 26.

Sheehan P, Brorby G, Kalmes R, Mowat F, Richter R, Finley B. Characterization of the cumulative exposures of U.S. automobile mechanics. *AIHce*, Anaheim, CA, May 23–26, 2005.

Buffler PA, Kelsh M, Kalmes R, Lau E, Chapman P, Brorby G. A nested case-control study of brain tumors among employees at a petroleum exploration and extraction research facility. *J Occup Environ Med* 2005.

Kalmes R, Brorby G, Kelsh M, Buffler P. Exposure assessment for an epidemiologic study of brain tumors among petrochemical research workers. Presented at the American Industrial Hygiene Conference in Anaheim, CA, May 25, 2005.

Hessel PA, Kalmes R, Smith T, Lau E, Mink P, Mandel J. A nested case-control study of prostate cancer and Atrazine exposure. *J Occup Environ Med* 2004; 46(4).

Buffler PA, Kelsh M, Chapman P, Wood S, Lau E, Golembesky A, Wood R, Kalmes R, Brorby G. Primary brain tumor mortality at a petroleum exploration and extraction research facility. *J Occup Environ Med* 2004; 46(3).

Kolanz ME, Madl AK, Kelsh MA, Kent MS, Kalmes RM, Paustenbach DJ. A comparison and critique of historical and current exposure assessment methods for beryllium: implications for evaluating risk of chronic beryllium disease. *Appl Occup Environ Health* 2001; 16(5):592–614.

Paustenbach DP, Burke ML, Shum M, Kalmes RM. Airborne concentrations of ethyl and methyl cyanoacrylate in the workplace. *Am Ind Hyg Assoc J* 2001; 62(1).

Madl AK, Kalmes RM, Paustenbach DJ. Community one-hour inhalation exposure limits for chemical irritants among five agencies in the United States. Presented at the American Industrial Hygiene Conference and Exposition, Toronto, Canada, June 7–9, 1999.

Madl AK, Kalmes RM, Paustenbach DJ. Comparison of acute inhalation exposure levels for chemical irritants among five agencies in the United States. Presented at the Society of Toxicology Annual Meeting, New Orleans, LA, March 14–18, 1999.

Kalmes RM, Mathur DB. Application of risk-based strategies and the containment zone provision of the Regional Water Quality Control Board, San Francisco Bay Region to implement the first containment zone for a heavy metal (mercury) in California. Presented at the Annual Meeting of the Society for Risk Analysis, New Orleans, LA, December 8–11, 1996.

Paustenbach DJ, Jernigan JD, Bass R, Kalmes R, Scott P. A proposed approach to regulatory contaminated soil: Identify safe concentrations for seven of the most frequently encountered exposure scenarios. *Regul Toxicol Pharmacol* 1992; 16:21–56.

Prior Experience

Managing Scientist, McLaren/Hart ChemRisk, 1989–1999

Industrial Hygienist, Clayton Consulting Company, 1987–1989

Health and Safety Engineer, Chevron Chemical Company, 1984–1987

Intern, Shell Oil Company, 1983

Intern, IBM, 1981–1983

Project Experience

Proposition 65/Product Evaluations

Conducted Proposition 65 evaluations assessing potential exposure to children and adults for various chemicals including benzene, toluene, lead, cadmium, arsenic, phthalates, ethyl benzene, and formaldehyde, and various products (PVC, jewelry, containers, toys, cookware and tableware, and appliances). Developed sampling protocols to evaluate FDA and CPSC compliance, as well as exposure to metals in consumer products, specifically addressing dermal contact and incidental ingestion associated with hand-to-mouth activities. Managed product-testing and compliance programs for numerous companies involving heavy metal content of products. Performed assessment that evaluated dermal and oral migration of phthalates in various consumer products.

Exposure Reconstruction/ Occupational Epidemiology

Conducted numerous exposure assessment analyses for use in cohort and case-control health studies including petrochemical, aircraft, chemical, and agricultural industries. Designed and managed air sampling program to obtain 8-hour, peak and short-term levels for various job classifications to be used in epidemiological studies. Performed exposure reconstruction studies to evaluate chemicals such as beryllium, benzene, silica, formaldehyde, lead, and asbestos.

Industrial Hygiene/Air Sampling

Provided reviews of health literature, air sampling methods, and worker exposure data for silica, beryllium, and asbestos and their associated products. Conducted air sampling for numerous compounds such as benzene, other volatiles, oil mists, pesticides, and particulates in various occupational settings. Designed studies to simulate and reconstruct historical exposures in occupational and residential settings to volatile chemicals in solvents. Audited and reviewed health and safety compliance programs for petrochemical, agricultural, laboratory, and chemical manufacturing facilities, including review of labeling, MSDSs, training manuals, safe chemical handling procedures, ventilation, and employee training, and chemical inventory procedures. Assessed use of medical monitoring in occupational and community populations.

Risk Assessment/Brownfields

Managed numerous assessments of contaminated property for future residential, commercial, and school developments, while working closely with regulatory agencies to obtain approval of health-based strategies. Key issues for these sites included soil gas vapor migration, particulate emissions, and groundwater transport and fate modeling. Developed health based cleanup levels for scenarios such as residential, commercial, construction, and trespassers. Has successfully worked on sites involving chemicals such as TCE, PCE, 1,1,1,-TCA, EDB, PAHs, arsenic, lead, barium, and mercury.

Air

Managed more than 20 air risk assessments associated with the California Hot Spots Program (AB-2588) for aerospace, hospitals, chemical, and manufacturing facilities, including evaluation of hexavalent chromium, benzene, and propylene oxide. Also performed analyses of large hydrogen sulfide air monitoring datasets to evaluate potential sources and trends within a state.

Professional Affiliations

- American Industrial Hygiene Association (member)
- Northern California American Industrial Hygiene Association (member, former newsletter editor)
- American Society for Testing Material, Risk Assessment Committee (Former Member)