

# Curriculum Vitae

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**ROGER C. BREWER, Ph.D.**

**Title** Senior Environmental Scientist/Toxicologist

**Expertise** Environmental Hazard Evaluation  
Human Health and Ecological Risk Assessment  
Comprehensive Site Investigations, Subsurface Mapping  
Contaminant Fate and Transport  
Environmental Regulatory Compliance

**Academic Background** Ph.D. in Geology, [REDACTED], University of Alabama  
Master of Science in Geology, [REDACTED], University of Tennessee  
Bachelor of Science in Geology, [REDACTED], Appalachian State University

**Experience** Dr. Brewer is currently a Senior Environmental Scientist with the Hawai'i Department of Health. He has over twenty years of experience in oil and gas exploration, environmental site investigation and human health and ecological risk assessment. His environmental experience includes regulatory compliance audits, soil and groundwater investigations, quantitative human health risk assessments, and screening-level ecological risk characterizations. He has been involved in projects ranging in size from investigations of oil fields, mining districts and large industrial complexes to gas stations, dry cleaners and other types of small-scale commercial businesses. Dr. Brewer has considerable experience in the use of risk-based decision making methods to rapidly assess risks to human health and the environment at contaminated sites. He is the lead scientist in development of an environmental hazard evaluation program for the State of Hawai'i and helped develop a similar program for the California EPA as well as a program for use in Pacific territories and protectorates funded through the USEPA (e.g., Commonwealth of the North Mariana Islands and Guam). He has given numerous formal and informal training classes on methods to identify environmental hazards at contaminated sites and is actively involved in the continued development of state and federal environmental risk assessment programs. Dr Brewer is a member of the Interstate Technology and Regulatory Council team tasked with the development of national guidance on the use of Decision Unit and Incremental Sampling Methodology approaches for the investigation of contaminated sites.

**Regulatory Experience:**

- *Senior Scientist/Toxicologist, Hawai'i Department of Health (1993-1996, 2005-present).* Oversight of Environmental Hazard ("risk") Assessment program, including preparation of Environmental Action Level guidance documents, training of staff and local consultants, assistance to staff in review of site investigation reports, remedial action plans, risk assessments and project completion reports.
- *Senior Geologist, California Environmental Protection Agency (1999-2005).* Oversight of Environmental Hazard ("risk") Assessment program. Responsible for regulatory oversight of SLIC cases handled by the Water Board, including review of site investigation reports, remedial action plans, risk assessments and

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project completion reports; also responsible for developing in-house technical guidance related to the above topics.

## Private Experience:

- *Human Health and Ecological Risk Assessment of mercury-impacted soil, sediment, surface water and groundwater (Canada Occidental Petroleum, British Columbia).* Responsible for updates to draft human health and ecological risk assessments, including collection and summary of fate and transport data for mercury in air, soil and water and review of mercury toxicity to human and non-human receptors.
- *Risk-based assessment of solvent-impacted soil and groundwater at large research/light industrial complex to be potentially redeveloped as residential property (Northrop Grumman Corp.- Hawthorne).* Responsible for development of risk-based screening levels used to delineate areas requiring potential cleanup. Included fate and transport modeling of intrusion of subsurface vapors to indoor air and human health risk assessment, used as guide to cleanup actions.
- *Environmental Impact Study of proposed new container terminal (Stevedore Services of America, Chittagong, Bangladesh).* Field Manager. Responsible for collection, packaging and shipment of sediment and surface water samples at site for analysis and inclusion of data in EIS. Duties also included coordination with and oversight of local subcontractors tasked with collecting background data for the EIS.
- *Environmental Site Assessment of Oil and Gas Producing Fields and Fields in Reserve (Empresa Petrolera Chaco S.A., Bolivia).* Senior scientist and project manager assistant. The study was performed for 22 oil & gas fields and related facilities recently privatized by Bolivian state oil company (YPFB). The scope of work included the comprehensive, field-based inspection and characterization of facility activities and related environmental conditions; characterization of environmental impacts, risk-based analysis of sample data; and development of remedial action recommendations and associated cost estimates.
- *Human Health and Ecological Risk Assessment for Twelve State-Owned Mining Facilities (COMIBIL, Bolivia).* Senior Scientist. Part of a comprehensive environmental study of mining impacts to soils, surface water and air in central Andean region of Bolivia. The risk assessment section of the study included an evaluation of sample data; development and compilation of risk-based, human health and ecological screening criteria; and quantitative assessment of potential risks to human health and the environment.

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- *Environmental Compliance Assessment System (ECAS) Audits at U.S. Military Installations (Hawai'i, Korea).* Member of various teams that conducted field-based, environmental regulatory assessments at over 15 U.S. military installations. Primary duties included assessment of RCRA, CERCLA/SARA, FIFRA, and OSHA related issues and activities. The audits required expertise in state, federal, U.S. Army, and Department of Defense environmental regulations as well as applicable host-country regulations.

## Professional History

**Hawai'i Department of Health, Hazard Evaluation and Emergency Response** (March 2005 to present); Senior Environmental Scientist/Toxicologist

**San Francisco Bay Area Regional Water Board (Region 2)**, August, 1999-March 2005, Associate Engineering Geologist

**Dames & Moore**, October 1996 to August, 1999, Senior Scientist

**Hawai'i Department of Health**, 1994-1996, Geologist

**R. M. Towill Corporation**, 1992-1994, Geologist

**Nanjing University, China**, 1991-1993, Post-Doctoral Research Fellow

**University of Alabama**, 1989-1991, Graduate Council Research Fellow

**Amoco Corporation**, 1990, Exploration Geologist (student intern),

**Samuel T. Pees & Associates**, 1982-1986 (part-time), Exploration Geologist

## Professional Affiliations

Geological Society of America  
Society for Risk Analysis

## Citizenship

United States

## Countries Worked In

Bangladesh, Bolivia, Brazil, Canada, China, Korea, Mexico, Taiwan, United States, Venezuela

## Languages

English, Spanish (basic), Mandarin Chinese (basic)

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## Publications

### & Presentations (partial)

- Brewer, R. C., 2011, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater – Hawai'i Edition*: Hawai'i Department of Health, Honolulu, <http://www.hawaii.gov/health/environmental/hazard/eal2005.html>.
- Brewer, R. and Brodersen, J., 2010, Use of Multi-Increment Samples and Decision Units to Optimize Site Investigation, Assessment and Remediation: Remediation of Chlorinated and Recalcitrant Chemicals, Battelle 7th International Conference, Monterey, California, May 24-27, 2010.
- Brewer, R. C., 2009, *Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater – Pacific Basin Edition*: Commonwealth of the Northern Marian Islands, Division of Environmental Quality, Saipan, <http://www.deqsar.org/>.
- Ramsey, C. and Brewer, R., 2009, Multi-Increment Sampling: Regional Environmental Enforcement Associations, National Conference, Baltimore, April 15-17, 2009.
- Brewer, R. Brodersen, J., Jacobs, J. and M. Small, 2009, RBCA Grows Up, Introduction to Environmental Hazard Evaluation and Advanced Approaches for Site Investigations: 19th Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water, March 9-12, 2009, San Diego, California.
- HDOH, 2008a, *Tier 2 Soil Action Levels and Categories for Bioaccessible Arsenic* (June 2008): Hawai'i Department of Health, Office of Hazard Evaluation and Emergency Response.
- HDOH, 2008b, *Tier 2 Soil Action Levels and Categories for TEQ Dioxins* (June 2008): Hawai'i Department of Health, Office of Hazard Evaluation and Emergency Response.
- Brewer, R, Bernstein, D., Calisay, M., Peard, J. and E. Sadoyama, 2008, Greenfields, Brownfields and the Expedited Investigation of Very Large Areas: 18th Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water, March 10-13, 2008, San Diego, California .
- HDOH, 2007a, *Use of laboratory batch tests to evaluate potential leaching of contaminants from soil* (April 2007): Hawai'i Department of Health, Office of Hazard Evaluation and Emergency Response, <http://www.hawaii.gov/health/environmental/hazard/eal2005.html>
- HDOH, 2007b, *Pesticides in former agricultural lands and related areas - Updates on investigation and assessment* (May 11, 2007): Hawai'i Department of Health, Solid & Hazardous Waste Branch,

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[www.hawaii.gov/health/environmental/hazard/eal2005.html](http://www.hawaii.gov/health/environmental/hazard/eal2005.html).

- HDOH, 2007c, *Long-Term Management of Petroleum-Contaminated Soil and Groundwater* (June 2007): Hawai'i Department of Health, Office of Hazard Evaluation and Emergency Response, <http://www.hawaii.gov/health/environmental/hazard/eal2005.html>
- Brewer, R. Calisay, M. and Roberson, K., 2007, Farmers Know Best: Use of Batch Tests to Establish Soil Cleanup Levels for Leaching Concerns: 17th Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water, March 19-22, 2007, San Diego, California.
- Brewer, R., 2006a, What's The Matter With RBCA?: 22nd Annual Conference on Soils, Sediments, and Water, October 16-19, Amherst, Massachusetts.
- Brewer, R., Peard, J. Wongse, U., Ford, D. And Floyd, G., 2006b, Risk-Based Investigation and Assessment of Very Large Areas - Strategies From Hawai'i: 22nd Annual Conference on Soils, Sediments, and Water, October 16-19, Amherst, Massachusetts.
- Peard, J., Brewer, R., Brooks, B. and B. Cutler, 2006c, Living with Arsenic in Hawai'i – Case Study of a Former Sugar Cane Plantation: 22nd Annual Conference on Soils, Sediments, and Water, October 16-19, Amherst, Massachusetts.
- Brewer, R. C., 2005, *Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater* (February 2005, 5th edition): California Environmental Protection Agency, Regional Water Quality Control Board, San Francisco Bay Region, <http://www.swrcb.ca.gov/rwqcb2/esl.htm>.
- Brewer, R. D., 2000, Why We Bother - The Importance of Environmental Risk Assessments (abstract): Geological Society of America Annual Meeting, Abstracts With Programs, Reno, Nevada, November, 2000.
- Brewer, R. D., 1999, Development and Implementation of Risk-Based Corrective Action Programs: Strategies and Technologies of Integral Restoration Seminar, Mexico City, Mexico, March 25, 1999.
- Brewer, R. D., 1999, Purpose and Objectives of Risk-Based Environmental Due Diligence Audits: United States-Mexico Chamber of Commerce Risk Management and Sustainable Development Seminar Series, January 21, 1999, Tijuana, Mexico.
- Brewer, R.D. and Small, M.C., 1997, The many faces of RBCA: National Ground Water Association/American Petroleum Institute Petroleum Hydrocarbons Conference, November, 1997, Houston, Texas.
- Brewer, R. D., 1996, Use of SESOIL to develop Tier 1 soil action levels for groundwater-impact concerns, Hawai'i's experience (Chapter 25): in *SESOIL*, Amherst Scientific Publishers.
- Brewer, R. D., 1996, Risk-based corrective action, turning reason into effective policy (abstract): Abstracts with Program, Geological Society of America Annual Conference, Denver.
- Brewer, R. D., 1996, *Risk-Based Corrective Action and Decision Making at Sites With Contaminated Soil and Groundwater* (2nd edition, June 1996, updated in 2004): State of Hawai'i, Department of Health.