JAYNE FIFIELD KNOTT

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EDUCATION

1981: M.S. Civil Engineering (Environmental Engineering), Massachusetts Institute of Technology
1978: B.A. Geology and Physics, Mount Holyoke College
1977: Woods Hole Oceanographic Institute Summer Student Fellowship

TECHNICAL SPECIALTIES

Hydrogeology
Ground water modeling
Ground and surface water quality
Surface water hydrology
Environmental Compliance – Toxic Use Reduction Act (TURA), Source Registration, Water Management Act, National Pollutant Discharge Elimination System, Environmental Site Assessments
Permitting – Hydropower, Public Water Supply, Wetlands Protection Act, National Heritage Endangered Species Program, Massachusetts Environmental Policy Act (MEPA)

CERTIFICATIONS

General Toxics Use Reduction Planner (TURA)
Certified Woman Owned Business Enterprise (WBE)

PROFESSIONAL HISTORY

2008-Present:	JFK Environmental Services, LLC – Owner/Principal
1986-2007:	Independent Environmental Consultant – Jayne F. Knott
1984-1985:	Environmental Research and Technology, Inc. (Now ENSR Corporation)
1981-1984:	U.S. Geological Survey
1981:	GCA Corporation
1978-1981	Massachusetts Institute of Technology/Woods Hole Oceanographic Institute

AFFILIATIONS

American Water Works Association
New England Water Works Association
Conservation Commission, Northbridge, Massachusetts (1984-1986)

REPRESENTATIVE EXPERIENCE

Hydrogeology

- Northbridge, MA – Designed and implemented a pumping test for an industrial supply well. Analyzed pumping test data to determine aquifer properties and safe yield
- Montana – Hydrogeologic data analysis, 3-D visualization and report preparation for litigation at a site contaminated with chlorinated solvents
- Rhode Island – Hydrogeologic data analysis at a site contaminated with petroleum hydrocarbons in preparation for litigation

- Northbridge, MA - Managed the hydrogeologic study of a semi-confined aquifer to determine its potential as a public water supply including the design, implementation and evaluation of a 5 day pump test with groundwater sampling and analysis
- Nantucket-Cape Cod Ground Water Recharge Project – Project Chief of a USGS investigation of ground water recharge which involved the planning and management of well installation; the design, construction and installation multilevel ground water samplers; the use of geophysical techniques; water quality sampling and analysis, and the statistical analysis of data
- Truro, MA – Gasoline Spill – Designed a groundwater monitoring network and sampling schedule to determine the short and long term effect of a gasoline spill on groundwater
- Kin-Buc Superfund Site, New Jersey – Collected and evaluated hydrogeologic and groundwater quality data from the Kin-Buc hazardous waste landfill in New Jersey
- Burlington, MA – Determined the effect of an acid spill on a public supply well using acid/base chemistry and analytical groundwater modeling
- Collected and evaluated data for a study conducted by Professor John A. Cherry, Ph.D. (University of Waterloo) on the fate of DNAPL in groundwater

Groundwater Modeling

- Wilmington, MA – Used the USGS model MODFLOW and the MT3D solute transport model to simulate well head concentrations of NDMA for the Massachusetts Department of Public Health
- Groveland, MA – Used the USGS 3-D numerical groundwater flow model and extensive field data at this superfund site to determine the sources of groundwater contamination and to explore the effectiveness of potential remedial actions
- Confidential Client – Project manager of a study which used a groundwater model to design a groundwater collection system and to predict the volumes of water to be collected for treatment
- Burlington Northern Railroad, Minnesota – Developed a groundwater flow model to determine the paths of contaminant migration and to evaluate various remedial action alternatives including slurry wall construction and remedial groundwater pumping schemes
- Salt Marsh Research - Designed and conducted an extensive field and laboratory study of subsurface water flow in two New England salt marshes. Adapted and used a numerical model for the simulation of groundwater flow in the salt marsh ecosystem

Permitting & Reporting

- Hydropower licensing with the Federal Energy Regulatory Commission and the Energy Facilities Siting Council, involving negotiations with the MADEP, USEPA, U.S. Fish and Wildlife Service, MA Division of Fisheries and Wildlife, and local boards including the Northbridge Conservation Commission, and others
- Sewer connection, NPDES, water withdrawal and air permitting for manufacturer of welded wire products in Massachusetts
- TRI and TURA reporting
- TURA Plan preparation
- Wetlands Protection Act - Notice of Intent and Determination of Applicability preparation
- Public Water Supply permitting, including Environmental Notification review, and Water Management Act permitting (on-going)

Environmental Site Assessments

- South Natick, MA – Designed and implemented the investigation of solvent contamination at a site for sale under the terms of the Massachusetts Contingency Plan.
- Massachusetts - Managed the evaluation and cleanup of oil contaminated soils including assessment and remediation activities required by the Massachusetts Contingency Plan This work consisted of all of the required steps from the supervision of a Phase I Site Assessment through the preparation of a Response Action Outcome Statement.

Surface Water

- Blackstone River, MA – Design and supervision of a surface water flow study to determine the low flow impacts on fisheries and wildlife habitat in the bypass reach of a hydropower project (on-going)
- Massachusetts – Supervised the preparation of applications to the United States Department of Energy for grant money to develop and improve hydropower facilities at two locations

Publications

Fifield, J. L., "Consequences of a Simple Model of Vertical Mixing for Georges Bank", Report: Woods Hole Oceanographic Institution, Woods Hole, MA, 1977.

Fifield, J. L., "Peat Hydrology in Two New England Salt Marshes: A Field and Model Study", M. S. Thesis, Massachusetts Institute of Technology, Cambridge, MA, 1981.

Hemond, H.F. and J. L. Fifield, "Subsurface Flow in Salt Marsh Peat: A Model and Field Study", *Limnology and Oceanography* 27 (1): 126-136, 1982.

Knott, J. F., "Design of a Low Cost Multilevel Ground Water Sampler", *U.S. Geological Survey – Water Resources Bulletin*, 1984.

Knott, J. F., and J. C. Olimpio, "Use of Environmental Tritium and Ground Water Level Fluctuations to Estimate Recharge Rates to the Sand and Gravel Aquifers of Nantucket and Truro, Massachusetts", *U.S. Geological Survey – Water Supply Paper 2297*, 1986.

Knott, J. F., W. K. Nuttle, and H. F. Hemond, "Hydrologic Parameters of Salt Marsh Peat", *Hydrological Processes*, Vol.1, No. 2, 1987.

Durant, J. L., P. Shanahan, B. Jacobs, and J. F. Knott, "Contaminants in the Public Water Distribution System in the Town of Wilmington, Massachusetts (1981-2003): Sources, Fate, Transport, and Potential for Human Exposure, A Report to the Massachusetts Department of Public Health," Draft, 2008.