



I am a hydrogeologist who has been involved in NH's drinking water industry for over 15 years. I have experience in various projects including groundwater well exploration, development, and permitting, large and small community water supply regulations, public water supply operation and compliance protocols, water well construction, water treatment and water system designs, water conservation, and water supply protection. This has given me the technical knowledge and expertise to be a resource for the industry and lead others to bring projects to completion. My project management and business experience has given me the skills to understand budgetary needs, restrictions and opportunities.

I am able to address problems in a clam organized matter in order to make sound professional decisions. Whoever is at the table, whether it be co-workers, colleagues, stakeholders, litigators, etc, and wherever the discussion is held, be it a conference room, Board room, Town Hall or Legislature, and no matter how contentious the issues, I pride myself on providing good listening skills, an open mind, comprehensive knowledge and valuable feedback with grace and dignity. For these reasons, I am well known and respected in the industry.

EDUCATION

University of New Hampshire, Durham, NH
Masters of Hydrology, December 2007

Thesis, Evaluation of a Geospatial Regression Model for the Prediction of Bedrock Well Yield, under advisor Dr. Matthew Davis, December 2007

University of Montana, Missoula, MT
Bachelors of Science in Geology, May 2003

- Researcher, Placer Mining and Stream Restoration in the Elk Creek Watershed, Western Montana Elk Creek, MT, under advisor Dr. William Woessner, spring 2003
- Well Reader and Consultant, Hydrology of the Hayes Creek Drainage Basin, Hayes Creek, MT, under advisor Dr. William Woessner, fall 2001-spring 2002

HYDROGEOLOGIC EMPLOYMENT HISTORY

Water Well Program Manager, NH DES Drinking Water & Groundwater Bureau, Concord, NH
March 2018-March 2021

Manage the Water Well Program with the main responsibilities of staffing the Water Well Board, overseeing the Water Well Board rules, manage the water well completion database and provide water well construction, water quality, and water quantity guidance to the public. Attend to the Water Well Board needs as necessary, including preparing for and acting liaison during Board meetings and follow-up correspondence. Help update and manage the Water Well Database - including facilitating the development of new online tools and in-house data management programs. Provide insight to other DWGB staff in relation to private wells and community water systems. Provide information to the public related to private well maintenance, treatment and construction information.

Initiated the creation of a program to geo-reference existing and incoming water well construction data. With the aid of a highly talented computer programmer, proper management and training, this program is now utilized by DWGB and Geology personnel to continually update the water well database and increase the



number of water wells with GIS data layers. Initiated converting Water Well Board License Renewal to a suitable online data entry and payment program. Following two years of unproductivity, collaborated with various DES personnel to bring the project to completion.

Work collaboratively with other DES personnel, concerned public, public water suppliers and Town representatives in a high-profile project assessing and responding to concerns of over-extracting groundwater in a southern NH bedrock aquifer and community.

Water Systems Consultant / General Manager, Epping Well and Pump Company, Epping, NH
March 2014-March 2018

Perform the oversight of operations and compliance monitoring for over 60 public water supplies. Perform management and oversight of source of supply redevelopments, well reconstruction and/or treatment options. Work with clients to develop new sources of supply (well installation, testing and permitting, water conservation) for small public water systems. Perform data collection, analysis and reporting for Large Groundwater Withdrawal Permit monitoring programs. Work with developers/homeowners on selection of well drillers and locations of new private wells. Determine adequate water treatment options for private wells. Design and manage installation of pump systems and water treatment systems. Communicate with private well owners regarding drinking water concerns.

General management of various company departments (service technicians, financial administration, human resources, marketing and water testing laboratory). Communicate directly with customers on project goals, costs and timelines. Provide representation at Town meetings, Association meetings and other public forums as necessary. Management of field personal to complete project goals. Perform cost analysis of completed work. Manage employee recruitment, hiring of new employees, release of current employees and advancement of current employees.

Project Hydrogeologist, Geosphere Environmental Management, Inc., Exeter, NH, June 2005-February 2014
[Project and Personnel Manager (2010-2014), Field Hydrologist (2007-2010), Hydrogeologist Intern June 2005- December 2007]

Conduct project management and oversight during field activities for various projects in the areas of water supply exploration, permitting, site assessment, and remediation. Perform data evaluations and mapping using numerical programming, analysis of hydrogeologic data, report writing, and regulatory permit applications. Generate scopes of work and cost estimates for proposals, followed up by budget tracking, project performance and management, and invoicing. Train field technicians, manage field supplies, and attend MassDEP, NH DES, and NEWWA educational conferences and trade shows. Perform well performance evaluations and groundwater withdrawal induced adverse impact determinations with the use of 2D and 3D groundwater modeling programs (GIS, SURFER, MODFLOW, and other similar programs).

Mathematics Department Adjunct Professor, Southern New Hampshire University, Manchester, NH Fall 2011-2013

Taught introductory mathematics classes each Fall for three years. Class size average was 35 students. Curriculum included general statistics, probability and finance. Exemplary student reviews following closure of each class.

Hydrologist Intern, McDonald Morrissey Associates, Inc., Concord, NH, December 2004- May 2005

Assisted hydrologists with formatting input data for MODFLOW hydrogeologic modeling and completed Excel-



based projects. Contoured contaminant plumes and developed graphics displaying well log information, water levels and contaminant levels over time.

Professional Certifications/Affiliations

Licensed Professional Geologist, NH #817
New Hampshire Water Works Operator, #3344
New Hampshire Water Works Association, Board of Directors*
*(brief tenure 2017-2018 – recruited, sworn-in, yet stepped-down due to conflict of interest as DES employee)
Geological Society of New Hampshire, Treasurer, Website Manager
New England Water Works Association (NEWWA), Water Resources Committee
Chairman, NEWWA Water Resources October Symposium (2015, 2016, 2017)
OSHA Hazardous Waste Site Worker
American Institute of Professional Geologists
Geological Society of America

Representative Water Supply/Aquifer Study Capabilities and Examples

- Production and monitoring well installation oversight, logging of materials, and sampling
- Pumping test analysis on private and municipal production wells (sand and gravel & bedrock aquifers)
- Small and Large Community Well permitting (NH DES, MassDEP)
- Provide private well homeowners with well siting, well characteristics and water quality guidance
- Multiple parameter water quality sampling, including Safe Drinking Water Act sampling
- Determination of aquifer safe yield characteristics and groundwater flow evaluations
- Stream gauging and water level monitoring for determination of surface water/groundwater interactions
- GIS mapping of groundwater flow and various site characteristics
- 2D/3D groundwater modeling for groundwater flow, mounding, and boundary condition determinations
- Fracture trace analysis for bedrock well siting

Alton, NH	Aide small community water system in complying with wellhead protection regulations.
Billerica, MA	Irrigation well testing, perform a 24-hour pumping test and water quality analyses on an existing bedrock irrigation well in order to determine a safe yield and treatment requirements.
Burlington, MA	Fracture trace analysis mapping and well siting of a bedrock irrigation well.
Candia, NH	Small community well testing, perform a 24-hour pumping test and water quality analyses on two existing bedrock wells in order to determine a safe yield.
Concord, MA	Irrigation well testing, perform a 24-hour pumping test and water quality analyses on an existing bedrock irrigation well in order to determine a safe yield and treatment requirements.
Douglas, MA	Fracture trace analysis mapping and well siting of a bedrock irrigation well.
Eliot, ME	Managed the upgrade of a small community water system pump house (pumps, storage tank, treatment).
Epping, NH	Perform testing and NH DES LGWP permitting of a proposed bedrock public water supply well within



an existing wellfield of two permitted bedrock wells. Continual Monitoring and Reporting.

Franklin, MA	Perform a pumping test/step-tests on a 2 ½-inch diameter well tubular irrigation wellfield to determine the safe yield.
Grafton, MA	Evaluation of streamflow conditions in Cronin Brook and induced infiltration from the pumping of the Follette Street Well.
Granby, MA	Small community bedrock well testing to determine a safe yield and treatment requirements.
Hampton, NH	Long-term wetlands and water level monitoring under a NH DES LGWP adverse impact assessment monitoring conditions for two public water supply bedrock wells (150 and 200 GPM).
Hampton, NH	Long-term water level monitoring and analysis of private wells under a Well Owner Response Policy as part of the permitting process for one sand and gravel well in the Town of Stratham (predecessor of Large Groundwater Withdrawal Regulations).
Hampton, North Hampton, Stratham, and Rye, NH	Production well specific capacity evaluations on ten (10) sand and gravel and seven (7) bedrock water supply production wells to determine current well efficiencies in terms of specific capacity.
Hampton, North Hampton, Stratham, and Rye, NH	Community water supply Best Management Practices compliance surveys for businesses within the wellhead protection area.
Hampton, NH	Perform fracture trace analysis and geophysical surveys in order to site a potential new bedrock water supply well in the vicinity of an existing sand and gravel production well.
Hampton Falls, NH	Small community bedrock well testing to determine a safe yield and treatment requirements.
Hooksett, NH	NH DES LGWP Surface water level and streamflow Monitoring Collection, analysis, and annual reporting of water usage data pertaining to a diversion of surface water from a brook approximately 500 feet to a pond located within and hydraulically connected to a sand and gravel wellfield.
Hooksett, NH	Fracture trace analysis mapping and well siting of a bedrock irrigation well.
Hopkinton, MA	Well siting and testing of two bedrock irrigation wells. Performance of a 48-hour combined pumping test in order to determine safe long-term well yields.
Hopkinton, MA	Testing and permitting two sand and gravel public water supply wells in accordance with MassDEP (BRPWS-17 and BRPWS-19) and Water Management Act (WMA) regulations.
Hopkinton, MA	Hydrogeological study for a subsurface wastewater disposal System Perform a hydrogeologic study on a 700-acre site to determine suitable location for subsurface disposal of 290,000 gallons per day.
Littleton, MA	Isotope tracer analysis on surface water and groundwater drinking water sources to determine potential mixing.
Kingston, NH	Community water supply well redevelopments and pump house upgrades. Irrigation Wells and New Community well siting, installation, testing, and permitting of a bedrock public water supply well (27 gpm) for a new condominium development. Well testing and permitting actions under a revised NH



	DES LGWP incorporating two sand and gravel irrigation wells. Client obtained a revised NH DES
Kingston, NH	NH DES LGWP long-term water level monitoring involving the collection, analysis, and annual reporting of water level data collected in the vicinity of two permitted sand and gravel irrigation wells in accordance with NH DES large groundwater withdrawal permit requirements.
Kingston, NH	Irrigation Wells and New Community well siting, installation, testing, and permitting of a bedrock public water supply well (27 gpm) for a new condominium development. Well testing and permitting actions under a revised NH DES LGWP incorporating two sand and gravel irrigation wells. Client obtained a revised NH DES LGWP for the one bedrock and two irrigation wells at the property. Lead hydrologist and acting project manager and primary contact with client and NH DES.
Millbury, MA	Generation of a 2-dimensional groundwater flow model to analyze groundwater flow and contamination concentration (perchlorate) gradients in the vicinity of a sand and gravel water supply wellfield.
North Hampton, NH	New source desktop feasibility study incorporating 3-D groundwater modeling for a proposed new sand and gravel water supply well in order to determine potential adverse impacts that may occur as a result of groundwater withdrawals.
North Hampton, NH	Groundwater resources inventory study incorporating a review of the operational status of all existing sources, recommendations on aquifer optimization actions, and evaluation of all exploration activities performed on behalf of the client over the past 15 years.
Peterborough, NH	Irrigation well testing, Set-up wellhead assembly and perform a 24-hour pumping test and water quality analyses on an existing bedrock irrigation well in order to determine a safe yield and treatment requirements.
Plainfield, NH	Analysis of pumping test data for a small community bedrock public water supply well.
Salisbury, MA	Perform well siting, installation, testing, and permitting for a proposed sand and gravel public water supply well located within a wellfield of two approved sand and gravel wells (in accordance with the Massachusetts Department of Environmental Protection (MassDEP) (BRPWS-17 and BRPWS-19) and Water Management Act (WMA) regulations.
Seabrook, NH	Initiate a water level monitoring program and a multi-bedrock well wellfield that is known to impact the overburden aquifer and local surface waters in order to determine a low-impact sustainable withdrawal schedule.
Shrewsbury, MA	Hydraulic conductivity and groundwater mounding analysis to determine ideal location of a subsurface disposal area to infiltrate of 400,000 gpd of wastewater.
Stratham, NH	Small community bedrock well testing to determine a safe yield and treatment requirements.
Stratham, NH	Managed the upgrade of a small community water system pump house (pumps, storage tank, treatment).
Tilton, NH	Small community bedrock well testing to determine a safe yield and treatment requirements.
Weare, MA	Small public bedrock water supply well step-drawdown testing, downhole video analysis, and water



quality sampling and analysis.

- Westfield, MA Multi-wellfield monitoring well reconnaissance and redevelopment project in preparation for initiation of aquifer monitoring program.
- Westfield, MA Development, testing, and permitting of new sand and gravel public water supply well in the vicinity of two existing sand and gravel wells in accordance with MassDEP (BRPWS-17 and BRPWS-19), MEPA (ENF and EIR), and Water Management Act (WMA) regulations.
- Westfield, MA Aquifer water quality testing for bacteria (e.coli and enterococci) to determine source of consistent bacteria detections in public water supply wells.
- Various Locations, NH Provide insight and guidance to private well homeowners with well siting, well quantity and water quality concerns.
- Various Locations, NH Provide Public Water System monitoring and compliance oversight for over 60 small community water systems.

Representative GIS and 2D/3D Modeling Database Management and Mapping Projects

- Generation of geospatial databases for both water supply and environmental assessment projects
- GIS mapping of site details (i.e. wells, aquifers, protection zones, potential contamination sources, sampling locations, water levels, on-site features, regulatory setbacks, etc.)
- 2D and 3D Groundwater modeling including determination of groundwater flow, aquifer boundaries, and contaminant plume boundaries
- Mapping investigations to analyze viable water resource areas and development alternatives

- Beverly, MA 2D groundwater flow and contamination plume mapping of bedrock and sand and gravel aquifers at public water supply well site.
- Billerica, MA 2D groundwater flow and contamination plume mapping at MCP waste site.
- Hopkinton, MA Determination of input parameters and calibration limits for 3D groundwater flow model of groundwater mounding from a subsurface disposal systems on downgradient public water supply wells.
- Littleton, MA Town-wide GIS database generation and mapping of water supply assets, potential contamination sources, water supply mains, private wells.
- Millbury, MA 2D groundwater flow and contamination plume mapping of bedrock and sand and gravel aquifers at public water supply well site.
- North Hampton, NH Determination of input parameters and calibration limits for 3D groundwater flow modeling (MODFLOW) of the source area and potential adverse impacts of groundwater withdrawals at a sand and gravel wellfield downgradient of a landfill.
- Orange, MA Town-wide GIS database generation and mapping of water supply assets, potential contamination sources, private wells, and source of supply exploration areas.
- Salisbury, MA Town-wide GIS database generation and mapping of water supply assets, potential contamination



sources, water supply mains, private wells.

Salisbury, MA	Aided forester in mapping tree type distribution and tree cutting/thinning areas at a sand and gravel wellfield.
Westfield, MA	City-wide GIS database generation and mapping of water supply assets, potential contamination sources, stormwater outfalls, private wells.
Milton, NH	Generation of water distribution system “As-Built” plans for 160-connection mobile home park.
East Kingston, NH	Generation of water distribution system “As-Built” plans for 29-connection development.
Epping, NH	Generation of water distribution system “As-Built” plans for 12-connection development.
Rochester, NH	Generation of water distribution system “As-Built” plans for 162-connection mobile home park.

Representative Environmental Assessment and Remediation Capabilities and Examples

- Management of ASTM Phase I and Phase II Environmental Site Assessments
- Massachusetts Contingency Plan (MCP) Phase I through Phase V Investigations
- Performance of Release Abatement Measures (RAM), Immediate Response Actions (IRA)
- OHM Disposal Site Assessment, Characterization and Remediation
- Performance and management of subsurface field investigations (Test pits, borings, geologic logging, monitoring well installation, NAPL gauging, Magnetometer and soil gas surveys, indoor air testing, PID and FID field screening, Laboratory and field TPH analysis)
- Air, soil gas, soil, surface water and groundwater sample collection and data analysis
- Water level monitoring and mapping groundwater flow contours and/or contamination plumes
- VOC treatment system operations and maintenance
- Critical Exposure Pathway evaluations, vapor intrusion mitigation

Individual projects are not immediately relevant to the projects performed by Edgewater Strategies. Yet, this background is valuable to be able to provide well-rounded resolutions for problems related to contamination or potential contamination.