APPENDIX R

Resumes of Key Personnel

Bill Beckman has extensive experience in projects involving the use, storage, management and treatment of water. His experience includes evaluation and management of water resources such as watershed and runoff determinations, stormwater controls and management, and design, assessment and maintenance of ponds. He is also experienced in flow routing, dam design, inspection and repairs, flood stage determination, and flood assessment and analysis. He has completed projects for environmental management and permitting, such as stormwater management, water supply and diversion, and spill protection. Mr. Beckman is also experienced in the design of potable water-supply systems, including wells, transmission mains, pump houses and water treatment processes. He has considerable experience in planning and directing environmental site assessments for real estate transactions. His work has included investigation and assessment of subsurface contamination, and design of groundwater and soil remediation systems, including those that remove volatile organic compounds, petroleum hydrocarbons and heavy metals. He has supervised the design and installation of both underground and above ground storage tanks and dispensing systems for petroleum products. Mr. Beckman has also developed, constructed and analyzed many 2-D solute transport and 3-D ground-water flow models in hydrogeologic evaluations involving both ground-water supply and groundwater contamination.

Mr. Beckman's field and data analysis experience includes: collection of geophysical data from earth resistivity, seismic and gravity surveys; inspections to assess watershed characteristics; supervision of drilling, well development and aquifer testing programs; inspection of dams; interpretation of geophysical borehole logging data; directing well maintenance programs including well-loss studies; directing regional water budget analysis; and construction supervision of water-supply, water treatment, and soil and groundwater remedial systems. He has managed remedial investigations (RI), conducted feasibility studies (FS) and supervised remedial design at several CERCLA sites. Mr. Beckman has provided expert witness testimony, represented clients before local, state and federal agencies, and provided second opinion review services.

EDUCATION

M.S. in Civil and Environmental Engineering, 1978, University of Rhode Island, Kingston, Rhode Island

B.S. in Civil and Environmental Engineering, 1976, University of Rhode Island, Kingston, Rhode Island

REGISTRATION

Registered Professional Engineer in the states of Alabama, Connecticut, Delaware, Florida, Illinois, Kansas, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina and Wisconsin

Licensed Environmental Professional in the State of Connecticut.

TECHNICAL SOCIETIES

American Society of Civil Engineers

Association of Ground Water Scientists and Engineers (National Ground Water Association)

Environmental Professional's Organization of Connecticut

SUMMARY OF PROFESSIONAL EXPERIENCE

2008 to present:
Senior Vice President and Director of Leggette, Brashears & Graham, Inc., Shelton, Connecticut

1991 to 2008:
Vice President and Director of Leggette, Brashears & Graham, Inc., Wilton, Trumbull and Shelton, Connecticut

1987 to 1991:
Senior Associate with Leggette, Brashears & Graham, Inc., Wilton, Connecticut

1985 to 1987:
Associate with Leggette, Brashears & Graham, Inc., Wilton, Connecticut

1981 to 1984:
Senior Hydrologist with Leggette, Brashears & Graham, Inc., Wilton, Connecticut

1978 to 1980:
Hydrologist with Leggette, Brashears & Graham, Inc., Westport and Wilton, Connecticut

1976 to 1978:
Research Assistant, Civil Engineering Department, University of Rhode Island

SPECIFIC EXPERIENCE IN WATER RESOURCES, SUPPLY AND MANAGEMENT

New Castle, New York
Supervision of watershed hydrologic analysis using TR-20 and HEC-1 to assess the affects of storm water runoff at a residential development. The results were used to evaluate runoff control measures and to design control structures for a pond on the property.

Danbury, Connecticut
Supervised the watershed analysis to determine the pond surface elevation from a 100-year storm, the value of which formed the basis for designing repairs to a small earthen dam. Computer models TR-20 and HEC-1 were used in the analysis to evaluate and design modification of the pond outlet. Supervised the repairs made to the dam and documented the work in a report. Coordination with state and local agencies was required throughout the project.

Greenwich, Connecticut
Evaluated the hydrology and hydrogeology to assess the viability of a pond proposed for a residential estate. The work included storm-water runoff analysis, pond, berm and spillway design, flow routing through the proposed pond and spillway, evaluating the downstream conditions under possible flooding events, and representation of the client before local and state regulatory agencies.

Milford, Connecticut
Completed a pre- and post-development storm water runoff analysis for a proposed golf course. Storm water management controls were evaluated and designed, including a detention pond and an onsite storm drain system consisting of catch basins, pipe and a grit/oil/water separator. Runoff channels were designed and a plan was developed for erosion and sediment control. Floodway and floodplain hydraulic analysis of the adjacent river were completed to evaluate the potential for site development to impact water flow during larger storm events. Evaluated and designed an 11,000 gpd on site septic system for the treatment of sanitary wastes from the clubhouse, which includes a restaurant and banquet facilities. The work included field testing, projection of sanitary flows, preparation of plans and specifications, and preparation of applications to obtain local and state permits.

Sharon, Connecticut
Completed a hydrologic watershed analysis to determine peak runoff from storm events, evaluated and redesigned an existing spillway on a dam to allow passage of the peak runoff, evaluated downstream impacts from a hypothetical dam breach to prepare an emergency operations plan, and prepared plans and specifications for various repairs and improvements to the dam and spillway. The work was complete in response to a Consent Order from the Connecticut Department of Environmental Protection.

Redding, Connecticut
Developed plans and specifications for dredging an irrigation water storage pond at a golf course in order to restore the capacity of the pond. Alternatives for enlarging the pond were examined and compared with options for increasing the irrigation supply sources. Plans and specifications for maintenance of a 5-pond/stream system were also prepared. The work included delineation of contributing watersheds, calculation of peak flows and development of BMPs for sediment control.

SPECIFIC EXPERIENCE IN WATER RESOURCES, SUPPLY AND MANAGEMENT (continued)

Danby, Missouri

Completed a hydrologic analysis of pre- and post-development storm water runoff of a proposed limestone quarry; the results are being used to design storm-water management and erosion controls. Sedimentation basins were designed to serve the dual purpose of capturing sediment and controlling the release of storm water runoff. The analysis and preliminary design of a sedimentation basin for the disposal of about 850,000 cubic yards of dredged sediments was also completed, including a 130 foot high rock fill dam to serve as the impounding structure for the basin. Engineering reports and drawings were prepared to support applications for construction with the state and the Army Corps of Engineers.

Bedford, New York

Evaluated the hydrology and hydrogeology to assess the feasibility of a pond proposed for a residential estate. The work included watershed delineation, test pits to assess soil and groundwater conditions, storm-water runoff analysis, pond and spillway design, flow routing through the proposed pond and spillway, checking the capacity of nearby storm sewers, and representation of the client before local and state regulatory agencies.

Portland, Connecticut

The options for draining a 3.3-acre quarry pond were evaluated. A hydrologic evaluation of the watershed was completed in order to design sediment and erosion controls, and to prepare runoff management controls to minimize impacts to nearby wetlands and streams. The potential for quarry restoration to impact groundwater was also evaluated. Wetlands were mapped and a site plan was developed. Detailed plans of the options were prepared. Applications for permits from the local Planning & Zoning Commission and Inland Wetlands Commission were prepared and submitted. The client was represented at public hearings for both local agencies. Meetings were held with CTDEP staff to discuss permitting requirements and procedures for the project.

Chappaqua, New York

Completed a hydrologic analysis of a pond in a residential community, including watershed delineation, calculation of runoff, and routing through a sedimentation basin to reduce materials from accumulation in the pond. The spillway structure was redesigned to minimize flooding that occurred during storm events. Maintenance and dredging of the pond was included.

Bethel, Connecticut

The feasibility of a 0.2-acre pond in a low-lying area on a 5-acre residential property was evaluated, which included the mapping of wetlands and the preparation of a site plan. The watershed hydrology was evaluated, and the soils and groundwater levels were investigated. Detailed plans and specifications were prepared for use in permitting and construction. Applications for both Planning & Zoning and Inland Wetlands permits were prepared and coordinated through the review, public hearing and comment process. Construction oversight was provided and routing construction status reports were submitted to the town. As-built plans of the pond were prepared and submitted to the town in order to meet a condition in one of the permits.

SPECIFIC EXPERIENCE IN WATER RESOURCES, SUPPLY AND MANAGEMENT (continued)

Chappaqua, New York

Plans to conduct maintenance dredging in a portion of a 9-acre pond were evaluated to provide a second opinion to the owners. The hydrology of the watershed was evaluated. BMPs were examined for potential application in the watershed to reduce the volume of sediment being carried into the lake. Local, state and federal permitting requirements were identified and summarized for the owners. The planned method for dredging was reviewed, along with the plans for disposal of the dredged sediments. Recommendations were made to supplement the planned maintenance dredging with the construction of sediment traps on the tributaries to the lake.

Greenwich, Connecticut

The watershed hydrology, storm water runoff, and capacities of the stream/pond system throughout the 150-acre, 18-hole golf course were evaluated. A detailed runoff analysis was completed to estimate peak flows for various storm events. Options were evaluated to reduce flooding which frequently occurs during storm events. Culvert and stream channel capacities were calculated and potential improvements evaluated. Based on a bathymetric survey of the bottom of the large pond, options for the ponds were evaluated to improve storm water management capabilities and increase storage volume in consideration of the need for irrigation at the golf course. Construction plans were prepared for removal of sediment from streams and ponds, for modification to pond outfalls, and for new culverts. Volumes of sediment to be removed from the ponds were estimated for each option. The cost of each option were estimated and presented to the client. Applications for local, state and federal permits were prepared and submitted. Local permits were obtained.

Torrington, Connecticut

To increase the storage capacity of ponds used for irrigation water, an evaluation and design was completed to remove existing sediment to deepen and enlarge two ponds. The work included a bathymetric survey of the bottoms of the ponds, evaluation of the hydrology and water flow through the ponds, design for a new outlet, preparation of construction drawings, support of the permit application to the municipality, preparation and support of an application with the CTDEP, and coordination with the Army Corps of Engineers. Upon receipt of all approvals, assistance was provided in contractor bidding and selection.

Clarksville, Missouri

As the main component of a stormwater management program to facilitate expansion of a limestone quarry, a 1,400-foot long, 35-foot high dam was designed to intercept streamflow. The work included a hydrologic evaluation of the watershed and determination of streamflows, evaluation of soil data obtained from borings drilled in the footprint of the planned dam, design of the dam and outlet, and preparing, submitting and supporting applications with the state and Army Corps of Engineers. Construction supervision was provided. The finished project resulted in the creation of a 20.5-acre lake and a 2,500-foot channel that conveyed the streamflow to an adjacent watercourse.

SPECIFIC EXPERIENCE IN WATER RESOURCES, SUPPLY AND MANAGEMENT (continued)

Bedford Corners, New York
Completed evaluation and design tasks to deepen and enlarge a pond on a residential/agricultural estate. The work included a bathymetric survey of the pond bottom, inspection of the dam, evaluation of the hydrology and streamflow through the pond, and development of an engineers report and construction drawings that were used in support of an application for a local permit.

Stamford, Connecticut
Inspected a masonry stone dam on a community pond to assess the source of water flowing out of the ground a short distance downstream of the dam. The work also included a review of construction drawings for the dam and interviews with people familiar with the dam and pond. The water was determined to be from the spillway and was being diverted through stone riprap at the base of the dam by the accumulation of leaf debris and vegetation. The water was not seepage under the dam. The findings were summarized in a letter that was submitted to the CTDEP. Assistance was also provided for preparation of an Emergency Operations Plan.

Mt. Kisco, New York
The viability of creating a pond on a private estate was assessed by evaluating the hydrologic conditions, groundwater levels, and soils in the location of the proposed pond. Due to the small contributing watershed, augmentation of the water in the pond with water from an irrigation well was projected to be necessary during dry periods. Design of the pond and outlet was completed, and construction drawings were prepared and used in obtaining a permit from the town.

Katonah, New York
To alleviate flooding conditions in the area of a pond on a residential property, an evaluation was completed to identify modifications to the pond and outlet that would reduce the magnitude and frequency of flooding during larger storm events. Construction drawings were prepared that included the removal of sediment from the pond and reconstruction of the outlet.

Croton-On-Hudson, New York
Evaluation of the significance and severity of seepage downstream of a masonry stone dam and inspection of the condition of the dam. Approaches to fix the seepage and make repairs to the dam without drawing down the lake were evaluated. For each approach, the ease of implementation and regulatory approval requirements were evaluated. A report that summarized the advantages, disadvantages and costs of the various approaches was prepared and submitted to the owner.

Redding, Connecticut
Assessed the viability of constructing a pond on a residential estate. The soils, groundwater level and contributing watershed were evaluated to develop a design in which the outlet elevation was selected to maximize the utilization of groundwater as the source of water to the pond. Cuts into the hillside were balanced by fills for the berm in order to create the pond.

SPECIFIC EXPERIENCE IN WATER RESOURCES, SUPPLY AND MANAGEMENT (continued)

Fairfield, Connecticut
Assessed the viability of constructing a pond on a residential property. The soils and groundwater levels were evaluated by drilling borings and a hydrologic evaluation of the contributing watershed was completed to define surface water contribution to the proposed pond. A preliminary design for the pond, the normal water level in the pond and the outlet was prepared.

Pawling, New York
Repairs to a combined stone masonry/earth fill dam were assessed and designed to stop leakage through the dam. The work included an inspection of the dam, development of an approach for stopping leakage, preparation of construction drawings for the repairs, coordination with the municipality for the work permit, and construction supervision.

Orange, Connecticut
Evaluated the condition of a farm pond dam and the cause of water observed below the dam to determine the ability of the pond and dam to accept stormwater runoff from planned commercial development of the property. The dam was inspected and the proposed storm water management system was reviewed to compare the rate and volume of storm water to enter the pond with the storage capacity of the existing pond. Repair and maintenance items for the dam and an outlet from the pond were recommended.

North Salem, New York
Evaluated the cause of road runoff flowing through a residential property and depositing sand and sediment into a farm pond. The contributing watershed was defined and options for rerouting the runoff and eliminating sediment deposition to the pond were identified and summarized for the owner. Represented the owner in negotiations with the town in order to implement corrective actions.

Newtown Square, Pennsylvania
In response to a directive to the owner from the state, measures to repair identified deficiencies were developed. The dam and conditions were inspected, a hydrologic analysis was completed to understand flows into the pond and through the outlet of the dam, modifications to the outlet were designed, and construction drawings and specifications were prepared. A breach analysis was completed to define the downstream inundation area as part of the Emergency Operation Plan that was prepared to meet regulatory requirements.

Doylestown, Pennsylvania
An Emergency Operations Plan was prepared to meet regulatory requirements. The work included an inspection of the pond, dam and outlet, an evaluation of the outlet and flow through the pond, and a breach analysis to define the downstream inundation area.

Bloomfield, Connecticut
Evaluation of an office park water supply consisting of eight high-yield bedrock wells. Recommendations were made for improved yield and well operation and an estimate developed for total safe yield of the system.

SPECIFIC EXPERIENCE IN WATER RESOURCES, SUPPLY AND MANAGEMENT (continued)

Brandenburg, Kentucky
Siting an industrial water-supply well to develop the required yield while avoiding the capture of nearby organic contamination in the aquifer.

Creswell, North Carolina
Computer model analysis of the effects of a proposed peat harvesting operation on a five-layer aquifer system in a Coastal Plain environment. A three-dimensional model was used to simulate dewatering for removal of the surficial peat layer and the operation of several deep supply wells, to allow for the evaluation of regional and local changes in heads and flows and the estimation of ground-water inflow.

Fairfield County, Connecticut
Hydrogeologic evaluation to determine groundwater yields and environmental impacts of small water supplies for numerous residential and industrial developments. Also, provided expert testimony and assistance in obtaining permits.

Hampton, New Hampshire
Identification of primary, secondary and indirect recharge areas to the supply wells of the municipal water system. Watershed protection guidelines were developed and recommendations made for installation of several monitor wells and enactment of a regular monitoring program.

Massachusetts and New Hampshire
Evaluation of supply wells and operations for seven member companies of the American Water Works Service Corporation resulting in recommendations to improve well yield and system operations.

Parkersburg, West Virginia
Utilization of a computer model to evaluate the effects of dredging in the Ohio River on nearby industrial water-supply wells, heavily dependent on river infiltration.

Rockland County, New York
Computer model analysis of the Spring Valley Water Company's 14 mgd Ramapo Valley Well Field in a buried glacial valley environment. Of primary concern was defining the effects of well field operation on flow in the Ramapo River and developing an optimum well field management plan in regard to various flow conditions of the river.

Saudi Arabia
Model evaluation of a proposed 40 mgd well field for the King Khalid Military City under numerous situations and well combinations. Pump design and specifications were based on the model results.

Biron, Wisconsin
Supervised the design, permitting and construction of a 16-inch water main to connect a new 500 gpm supply well with an existing storage tank. The design and permitting for the well house and water treatment for disinfection and corrosion control was also completed.

SPECIFIC EXPERIENCE IN WATER RESOURCES, SUPPLY AND MANAGEMENT (continued)

Mount Olive, New Jersey
Supervised the design of a water main to connect a new 800 gpm supply well with an existing storage tank, well house, and water treatment for disinfection and corrosion control. Provided technical support during construction and start-up of the well.

Somers, New York
Supervised the design, including plans and specifications, of wells, hydraulic controls and transmission piping for separate multiple well systems for irrigation.

Lewisboro, New York
Supervised the design, including plans and specifications of a well, hydraulic controls and transmission piping for a potable water supply at an office building. Technical support was provided to obtain the necessary permits and approvals.

Mt. Kisco, New York
Designed equipment, piping and pump house to collect water from a well field comprised of four bedrock wells with a design yield of 240 gpm, to treat the water for disinfection, corrosion control and radon, and to convey the treated water to the existing municipal potable water distribution system. The work included coordination of contractors during construction and obtaining the necessary permits and approvals for constructing and operating the wells and treatment system.

Greenwich, Connecticut
Evaluated and designed a potable water system to serve a private school. The work for the system included pumps for the bedrock wells, filtration, iron treatment, disinfection, atmospheric and pneumatic storage tanks, booster pumps, and operational and backup controls. Testing was conducted and applications prepared for State permits, which were obtained on behalf of the client. Coordinated construction oversight and system start-up.

Deep River, Connecticut
Evaluated and designed upgrades to potable water systems in junior and senior high schools as part of the schools renovation projects. The work for the system included pumps for the bedrock wells, piping from the wells to the utility rooms in each school, filtration, and disinfection. Testing was conducted and applications prepared for State permits, which were obtained on behalf of the client.

Westport, Connecticut
Conducted a second opinion review of a watershed analysis to check the results of a TR-20 and HEC-1 analysis of a frequently flooding stream. The review included an assessment of the adequacy of the proposed stream channel modifications. A design of a small earthen berm was prepared to protect the client's property and presentations were made to local agencies to obtain approvals for construction.

Stamford, Connecticut
Provided expert witness services with regard to storm water runoff from adjacent properties causing damage to the client's property. The work included a site investigation of runoff patterns, technical assistance to the attorney, and testimony in court.

SPECIFIC EXPERIENCE IN WATER RESOURCES, SUPPLY AND MANAGEMENT (continued)

New Milford, Connecticut
Evaluated the impact of a proposed condominium development on the surface water and groundwater runoff to onsite and offsite wetlands. The work included a site inspection, evaluation of the development plans, identification of the watershed and its characteristics, review of published data, and representation of the client before a local regulatory agency.

New Canaan, Connecticut
Completed a second-opinion technical review for the municipality of the storm water management plan for a 60-unit residential development that had been submitted to the municipality for approval.

Ridgefield, Connecticut
Provided expert witness services with regard to storm water runoff from an adjacent property causing damage to the client's property. The work included a site inspection, review of available technical information, investigation of runoff patterns, review of depositions, technical assistance to the attorney prior to and during the trial, and testimony in court.

New Rochelle, New York
Developed a plan to control the entry of offsite storm water runoff onto a property and to control the onsite process water and storm water. The work was completed in response to an Order of Consent that had been issued by the New York State Department of Environmental Conservation to the property owner. The plan was approved and implemented.

Deep River, Connecticut
The existing on site septic systems for the junior and senior high schools were evaluated and upgrades were designed as part of the overall renovations of these facilities. The work included field testing, review of existing sanitary flows and projection of future sanitary flows, evaluation and design of upgrades to meet current regulations, preparation of plans and specifications, coordination with local and state regulatory agencies, and preparation of applications to obtain necessary local and state approvals.

SPECIFIC EXPERIENCE IN SOIL & GROUNDWATER CONTAMINATION

Apple Valley, Minnesota
Design and implementation of a recovery/treatment system to eliminate free hydrocarbon product and reduce to acceptable levels the dissolved components of hydrocarbons in the water table aquifer at a petroleum bulk storage terminal.

Brooklyn, New York
Monitoring of fluid levels and conducting aquifer pump tests in order to define the extent of hydrocarbon product and implement a recovery system at a terminal and tank farm. Computer evaluation of various recovery techniques. Design of a multi-well system for the recovery of free product and remediation of groundwater containing VOCs.

Danbury, Connecticut
Conducted an environmental site assessment on an industrial property which was found to have soils containing lead and hydrocarbon compounds. Alternatives were evaluated; remediation of soil was coordinated and supervised.

Deepwater, New Jersey
Development of a computer program which contoured water-level and water-quality data for use in monitoring the multi-aquifer system and evaluating the effectiveness of the recovery well system in containing and reducing chemical concentrations at a chemical manufacturing facility.

West View, Pennsylvania
Development of a ground-water computer model to evaluate proposed remedial measures to prevent the further contamination of public water-supply wells from chemicals emanating from a nearby chemical plant.

Plumstead Township, New Jersey
Project Manager of hydrogeologic investigations for the Remedial Investigation/Feasibility Study at three Superfund sites. These studies were directed at defining the extent of contamination and evaluating alternatives for remediation. Investigative techniques included electromagnetic terrain conductivity and multi-level monitor wells.

Watertown, Wisconsin
Conducted a Feasibility Study for remediation of ground water and soils containing VOCs and developed conceptual design of remedial system. Detailed design of systems for recovery and treatment of groundwater and soils. Supervised construction management, start-up activities, and operation and maintenance of the systems.

Suffern, New York
Technical manager of computer modeling of TCEA plume in the vicinity of a municipal well field. The solute transport model was developed from field data obtained during the Remedial Investigation and was used to evaluate alternatives during the Feasibility Study for this Superfund listed site.

SPECIFIC EXPERIENCE IN SOIL & GROUNDWATER CONTAMINATION (continued)

Paulsboro, New Jersey
Assisted in the evaluation and design of liquid hydrocarbon recovery system installed in the water table aquifer at a petroleum refinery. Periodic review of recovery system to ensure continued operation. Computer modeling to evaluate effectiveness of recovery system and estimate remaining product in the aquifer. Design and implementation of an investigation and monitoring program for potential contamination in deep aquifers at the site. Alternatives for remediation were evaluated and a recommendation was made to the client.

Connecticut and New York
Numerous Phase I and II environmental assessments of Properties in Connecticut and New York to define site conditions and potential risks associated with hazardous or toxic chemicals. The information developed is used by involved parties prior to transfer of property ownership or refinancing.

Guayama, Puerto Rico
Completed a Feasibility Study at a CERCLA site involving TCE contamination of several public supply wells and asbestos in soils. Various processes were identified and alternatives were evaluated in detail, including cost analysis, according to EPA FS protocols.

Greenwich, Connecticut
Design of a hydrocarbon/groundwater recovery system at a maintenance garage for an electric utility company. The system included wells equipped with air-ejector pumps which discharged to a treatment unit. Engineering drawings and specifications were provided for contractor use and as-built drawings were supplied at the completion of the project.

New Windsor, New York
Design of a hydrocarbon/groundwater recovery system at a petroleum terminal/tank farm. The system included a high capacity recovery well, equipped with a pump that discharges to an air stripper. Effluent from the air stripper flows to the municipal sewer. The system was equipped with automatic controls and winterized to allow year-round operation. The work included construction management and system start-up and operation.

Patterson, New York
Design of a leachate collection and treatment system, including rerouting the drainage of surface water, at an unauthorized non-hazardous industrial waste landfill. The leachate collection system will mitigate the potential impact of the landfill on adjacent wetlands and is the first stage in the overall remediation of the landfill.

New Fairfield, Connecticut
Managed an environmental site assessment that identified contaminated soils and a potentially leaking UST. Follow-up work included closure and removal of the UST and excavation of soils with hydrocarbon product. The remediation of soils contaminated by waste coolants was also coordinated.

SPECIFIC EXPERIENCE IN SOIL & GROUNDWATER CONTAMINATION (continued)

Connecticut
Supervision of numerous projects for preparing Storm Water Pollution Prevention Plans, coordination with clients to implement the plans, and supervision of monitoring and sampling efforts conducted for the clients to meet regulatory requirements. Several sites included design of runoff treatment and control measures.

North Branford, Connecticut
Supervision of a Phase II investigation targeted on a PCE release at a former dry-cleaning establishment. Evaluation of remedial options and costs. Coordination with state agencies and clients (attorneys). Presentation of expert witness testimony.

Gaithersburg, Maryland
Review of technical file, coordination with the client and attorneys, presentation of expert witness testimony for case involving liability of planned remediation of petroleum contamination in soil and groundwater at a service station.

East Hartford, Connecticut
Supervised the closure of two 20,000-gallon USTs, including remediation of impacted soil and groundwater, and the installation of a10,000-gallon AST. The work included design of base support for the AST and technical support for obtaining state and local permits and approvals.

BIBLIOGRAPHY

"The Ramapo Valley Aquifer Model: A Case Study of Aquifer Modeling for Well Field Management Alternatives," Proceedings of the NWWA Eastern Regional Conference on Ground-Water Management, November 1983.

"Considerations in the Development of a Ground-Water Contaminant Transport Model," presented at the 36th Annual Meeting of the AWWA-Pennsylvania Section, April 1984.

"Computer Aided Design of Ground-Water Monitoring Programs," Proceedings of the ASCE Hydraulics Division Specialty Conference on Hydraulics and Hydrology in the Small Computer Age, August 1985.

"Well Field Management Designed to Minimize Impact on Surface Water Flow," Proceedings of the ASCE Symposium on Engineering Hydrology, August 1987.

John Benvegna's current responsibilities lie in overall client and project management which include proposal preparation, job coordination, budget management, managing technical personnel, data interpretation, report preparation, client representation and public testimony.

His experience includes, data collection and analysis; drilling supervision and formation sampling during the installation of groundwater monitoring, supply, irrigation and recovery wells; geologic logging; groundwater supply assessment and development, supply well design; the coordination and implementation of multi-well pumping tests; Phase 1 and 2 site assessments; the design, installation and maintenance of hydrocarbon recovery systems; supervision of underground storage tank removals; soil and groundwater investigations and remediation; the design and implementation of groundwater monitoring programs; environmental impact evaluations under the NY State Environmental Quality Review Act (SEQRA); insurance evaluations in support of settlement negotiations, expert witness testimony and negotiations with regulatory agencies.

Hazardous waste experience includes remedial investigations, work plan and RI report preparation; the design and implementation of interim remedial measures; closure plan preparation; surface impoundment closure; landfill investigations; consent order negotiations; public hearing presentations and, investigation and remediation cost evaluations. Regulatory program experience includes RCRA, CERCLA, CT Property Transfer, NY State Hazardous Waste, NY State Petroleum Bulk Storage and NY State Solid Waste.

EDUCATION

B.S. in Marine Geology, 1985, Southampton College, Long Island University,
Long Island, New York

REGISTRATION

Certified Professional Geologist by the American Institute of Professional Geologists

TECHNICAL SOCIETIES

American Institute of Professional Geologists, Member

Association of Ground Water Scientists and Engineers (National Ground Water Association)

CONTINUING EDUCATION

Health and Safety Operations at Hazardous Materials Sites, 29 CFR 1910.120(e) (3), 40 hours, with annual updates

Health and Safety Operations at Hazardous Materials Sites, 29 CFR 1910.120(e) (4), 8 hour supervisors course

Risk-Based Soil Screening Levels, 1997, The State University of New Jersey Rutgers Campus of New Brunswick, Cook College, 1.4 CEUs

SUMMARY OF PROFESSIONAL EXPERIENCE

2009 to present:
Vice President with Leggette, Brashears & Graham, Inc., White Plains, New York

2003 to 2008:
Senior Associate with Leggette, Brashears & Graham, Inc., White Plains, New York

1995 to 2002:
Associate with Leggette, Brashears & Graham, Inc., Wilton, Connecticut and White Plains, New York

1988 to 1994:
Senior Hydrogeologist at Leggette, Brashears & Graham, Inc., Wilton, Connecticut

1986 to 1988:
Hydrogeologist at Leggette, Brashears & Graham, Inc., Wilton, Connecticut

1985:
Hydrogeologic Technician at Leggette, Brashears & Graham, Inc., (Cooperative Education Program), Wilton, Connecticut

SPECIFIC EXPERIENCE IN GROUNDWATER SUPPLY

Purchase, New York
Project Manager. Evaluated the potential for developing a bedrock derived water supply for a private golf club to supplement their existing surface-water irrigation supply. The work included a site evaluation, water-budget calculation, fracture-trace analysis, a test boring program and identification of well drilling locations.

Patterson/Kent, New York
Project Manager. Conducted a simultaneous 72-hour pumping test on three proposed bedrock water-supply wells as part of a residential subdivision proposal. The work included design and coordination of the test including interacting with the reviewing regulatory agency, establishing and monitoring a network of offsite residential wells and, conducting sampling for micro-particulate analysis to determine the potential for surface water influence.

Kew Gardens, New York
Project Manager. Evaluated a water-quality problem with 4 sand and gravel wells used for an open loop, geothermal heating and cooling system. The work included reviewing well construction and water-quality information, a down-hole camera survey and a gamma-ray geophysical log. The results identified high iron in the water and that the pumps had been set in the wrong wells. Recommendations included redeveloping the wells, resetting the pumps and installing an iron treatment system.

Harrison, New York
Project Manager. Prepared an expert evaluation report in support of litigation between two residential property owners disputing the diversion of surface-water runoff from one property to the other. The work included storm water monitoring, documenting the natural surface water flow paths, identifying soil types, evaluating and commenting on an opposing engineers report and, providing public testimony in defense of an imminent domain proceeding brought by the Town.

Southampton, New York
Project Manager. Implemented a groundwater monitoring program for a newly constructed 18-hole golf course. The work includes groundwater and surface-water sampling for pesticides, herbicides and fertilizer compounds, storm water sampling, data evaluation and reporting.

Croton-on-Hudson, New York
Project Manger. Implemented a groundwater monitoring program for a newly constructed 18-hole golf course. The work includes groundwater and surface-water sampling for pesticides, herbicides and fertilizer compounds, storm water sampling and sampling of offsite residential wells.

SPECIFIC EXPERIENCE IN GROUNDWATER SUPPLY (continued)

Dover/Pawling, New York
(SEQRA) Project Manager. Developed a 650,000 gallon per day, bedrock derived water supply for a proposed golf course and residential development project and, participate in preparation of an Environmental Impact Statement in accordance with the New York State Environmental Quality Review Act (SEQRA). The work has included a water-supply feasibility assessment, fracture-trace analysis, supply well drilling, a baseline surface-water hydrology study, water-budget and recharge calculations, evaluation of existing water resources, impact assessment and participation in public hearings.

Bridgehampton, New York
(SEQRA) Project manager. Conducted a hydrogeologic assessment of a 516-acre parcel of land as part of an environmental impact statement for two proposed 18-hole golf courses and a 40 unit residential subdivision project. Activities included test boring installation; geophysical logging; soil sampling; an evaluation of the potential for salt water intrusion and up-coning in onsite supply wells; a water-budget analysis; an assessment of well yield potential; an evaluation of impact from past use as an automobile race track and report preparation.

New Castle, New York
(SEQRA) Project manager. Conducted a hydrogeologic assessment as part of an environmental impact statement to determine the feasibility of developing a water supply for the proposed expansion of a seminary. Activities included an evaluation of the existing supply well; water budget and fracture-trace analysis; siting and drilling of a new supply well; an evaluation of potential impact from an offsite contamination source; report preparation, public testimony, and preparation of associated sections of the draft and final environmental impact statements.

Brookfield, Connecticut
Conducted hydrogeologic assessments for two proposed residential subdivisions; conducted water budget and fracture-trace analysis; prepared the final reports and attended public hearings.

Darien, Connecticut
Provided public testimony before the local town board as to the potential effects of a proposed single-family residence on local groundwater levels. Attended two public hearings and successfully addressed concerns of an opposing engineer.

Montauk, New York
Provided drilling supervision during the installation of a 24-inch municipal supply well. Installed a monitor well and tested core samples for salinity as measures to reduce the potential for salt-water intrusion and ensure proper screen placement.

North Castle, New York
(SEQRA) Project manager. Conducted a hydrogeologic assessment of a 221-acre parcel of land as part of an environmental impact statement for a proposed 43-lot residential subdivision. Activities included water budget and fracture-trace analysis; a cumulative impact assessment; an evaluation of potential impact from a proposed onsite waste water treatment system including a nitrate balance calculation; report preparation; responding to public comments and public testimony.

SPECIFIC EXPERIENCE IN GROUNDWATER SUPPLY (continued)

Pound Ridge, New York
(SEQRA) Project manager. Developed a 280,000 gallon per day bedrock derived water supply and provided hydrogeologic expertise for an environmental impact statement for a proposed 18-hole golf course. Activities included determining the feasibility of developing the needed irrigation supply; water budget and fracture-trace analysis; an assessment of well yield potential; siting and drilling of six bedrock test wells; rehabilitating existing onsite wells; conducting two, five-well 72-hour pumping tests including the monitoring of offsite residential wells; report preparation; development of a long term groundwater monitoring program; preparation of associated sections of the draft and final environmental impact statements including responses to public comments and, testimony at public hearings and before various town agencies. The project was approved and has been developed.

Somers, New York
Project manager. Maintain a supply well monitoring program for an established residential subdivision as part of their water-supply permit. Responsibilities included the supervision of field personnel, client communication and preparation of annual reports.

Somers, New York
(SEQRA) Project manager. Developed a 430,000 gallon per day bedrock derived water supply and provided hydrogeologic expertise for an environmental impact statement for a proposed 18-hole golf course. Activities included well drilling, the design and supervision of a 5-well pumping test including offsite monitoring, report preparation, development of a long term groundwater monitoring program; preparation of associated sections of the draft and final environmental impact statements including responses to public comments and, testimony at public hearings and before various town agencies. The project was approved and has been developed.

Westport, Connecticut
Project manager. Conducted a review of drainage and flooding problems at an existing golf course and supervised the installation of test borings. Final recommendations included the construction of natural ponds which have subsequently been installed.

SPECIFIC EXPERIENCE IN GROUNDWATER CONTAMINATION

Yonkers, New York
(SEQRA) Project Manager. Conducted an investigation of a closed ash landfill as part of an environmental impact statement submitted in support of a commercial re-development project. The work was conducted in accordance with the New York State Environmental Quality Review Act (SEQRA) and included a soil and groundwater investigation, public testimony and successfully addressing the concerns and criticisms of opposing neighbors and their consultants. The site is now developed with several large retail chain stores.

White Plains, New York
(NYS Petroleum Bulk Storage) Project Manager. Provide environmental consulting services to a commercial property management company for multiple commercial office building properties in the Petroleum Bulk Storage Program. The work has included Phase I and II site assessments, UST closures and installations, and petroleum spill investigations and remediation.

Bedford, New York
(NYS Environmental Restoration Program) Project Manager. Designed and implemented investigation of a municipality owned hazardous waste site under the New York State Environmental Restoration Program, formerly the Brown Fields Program. The work has included preparation of a remedial investigation work plan, negotiating with the regulatory agency, budget preparation and implementation of fieldwork to define the nature and extent of the contamination.

Cortlandt, New York
Project Manager. Provide environmental consulting services to a municipality for multiple projects within the Town. The work has included Phase I site assessments, administering a golf course monitoring program, storm water monitoring and investigation of a former municipal landfill.

Hartsdale, New York
(NYS Solid Waste Program) Project Manager. Investigated soil at two school athletic fields constructed by a contractor using fill material determined to contain solid waste. Work included preparation of an investigation work plan and site closure plan, soil and surface water sampling, negotiating with the regulatory agency, advising the school board on closure options and costs, public testimony and the design and placement of soil caps.

Bridgeport, Connecticut
(RCRA). Project Manager. Supervised quarterly ground- water monitoring at a city landfill and prepared quarterly and annual reports; interacted with regulatory agencies and prepared the groundwater section of a part B permit application.

Danbury, Connecticut
(RCRA) Project Manager. Coordinated quarterly groundwater sampling and prepared quarterly and annual reports for a municipal landfill. Responsibilities also included the preparation of a post closure groundwater monitoring plan.

SPECIFIC EXPERIENCE IN GROUNDWATER CONTAMINATION (continued)

Sag Harbor, New York
Conducted an investigation of hydrocarbon contamination at an abandoned tank farm. The investigation included groundwater sampling, soil sampling, soil-gas surveys and tidal influence study.

Plainville, Connecticut
Project Manager. Conducted groundwater and soil investigations as part of a remedial investigation at a former wastewater lagoon. Coordinated groundwater and soil sampling programs and designed and tested a five-well hydrocarbon recovery system.

Hastings, New York
Project Manager. Conducted a remedial investigation at a former petroleum bulk storage facility designated as a NY State Class 2 inactive hazardous waste site. The investigation included soil and groundwater sampling for chlorobenzene, PCBs and ethylether, preparation of a final report and technical support during preparation of a risk assessment and feasibility study.

Florence, South Carolina
(RCRA) Supervised test drilling and installation of monitor wells as part of an investigation into contamination by surface impoundments at a wood-treatment facility. Determined rate and direction of groundwater flow, evaluated groundwater monitoring data and determined the extent of aquifer contamination.

Great Neck, New York
(NYS Hazardous Waste) Project Manager. Conducted a remedial investigation and feasibility study at a Class II inactive hazardous waste site. Responsibilities included defining the extent of soil and groundwater contamination, design and installation of a groundwater recovery system, implementation of interim remedial measures, preparation of the remedial investigation report, public awareness presentations and interaction with the regulatory agency.

New York, New York
Project Manager. Conducted evaluations of investigation and remediation costs for over 200 sites located throughout the U.S. on behalf of an insurer as part of settlement negotiations between the insurer and 29 different policy holders. The work included reviewing applicable State and Federal regulations and soil and groundwater data; evaluating proposed remedial alternatives and investigation and remediation costs; challenging unjustified items and presenting remedial alternatives and revised costs. The sites included manufactured gas plants, power generating plants, industrial and municipal landfills and wood treating facilities located throughout the United States.

Milford, Connecticut
(RCRA). Project Manager. Coordinated and implemented clean closure efforts for two metal hydroxide surface impoundments. Responsibilities included designing and implementing a soil and groundwater investigation, interacting with regulatory agencies, preparing the final closure plan and conducting closure.

SPECIFIC EXPERIENCE IN GROUNDWATER CONTAMINATION
(continued)

Queens, New York
(NY Petroleum Bulk Storage) Project Manager. Supervised the closure of ethylene glycol storage tanks and waste oil tanks at JFK-International Airport for the Cargo Division of a major airline. Tasks included coordinating with Port Authority officials and the NYSDEC, completing a Tenant Alteration Application, removing and disposing of five underground bulk petroleum storage tanks, confirmation sampling, soil disposal and submittal of a final closure report.

Mount Kisco, New York
Project Manager. Conducted an investigation to determine the nature and extent of groundwater impact associated with a petroleum release from an underground fuel oil storage tank that impacted residential supply wells. The investigation was conducted on behalf of an insurance company and included preparation of a work plan for regulatory approval, the installation of bedrock monitor wells, groundwater sampling, a site survey, free product recovery, sampling and maintenance of carbon filter systems for impacted homeowners, preparation of an investigation report and groundwater monitoring plan and, interaction with the regulatory agency and neighbors.

Various Locations, New York, Connecticut
Project Manager. Conduct insurance claims oversight at over 140 petroleum release sites on behalf of a major insurance company. Responsibilities include determining the cause of the release and the extent of soil and groundwater impact, assessing the applicability of insurance coverage, remediation oversight, cost negotiations with contractors and assuring regulatory compliance.

White Plains, New York
(NYS Hazardous Waste) Project Manager. Provided environmental consulting services at the Westchester County Airport. Projects included continuation of a site wide groundwater monitoring program and, implementation of interim remedial measures for solvent impacted soil and final closure of a former onsite septic field designated as an inactive hazardous waste site.

Based in the firm's White Plains, New York office, Sean Groszkowski manages environmental projects with multi-million dollar construction and remedial costs that cross a wide spectrum of environmental disciplines, including: regulatory compliance; hazardous waste investigations and cleanups; hydrogeological investigations; environmental assessments; contaminant fate and transport modeling; and litigation support. He has developed experience through a wide range of project types, environmental conditions, and multiple regulatory agency liaisons. Sean has a strong background in site characterization, corrective action plan development and in the design and implementation of remedial systems. He is acutely familiar with Federal, State and local environmental regulations and has developed a familiar relationship with the administrators of those agencies throughout the Tri-State Area.

Sean specializes in management of inactive hazardous waste site remediation under the New York State Brownfield Cleanups Program (BCP). With these large interdisciplinary projects, Sean is involved in the project development from the performance of the initial site assessment, application and entry into the BCP to permit acquisition and remedial construction management and subsequently progress through to regulatory site closure and site management. These sites have involved a range of contaminants that pose particular challenges to remediation including the following: PCBs; chlorinated solvents; petroleum; viscous urethanes; and mercury, lead, and other heavy metals.

Sean's areas of expertise include development and/or implementation of: Phase I and II Environmental Site Assessments (ESAs); property transaction risk assessment and environmental reserve cost estimations; regulatory liaison communications (Local, City, State and Federal); regulatory compliance activities (USEPA, VCP, BCP, RCRA, CEQR, TSCA, Spills…); Remedial Investigation Work Plans and hydrogeologic investigations (characterization and delineation of soil, groundwater and soil vapor contamination); Feasibility Studies and pilot tests; development and implementation Remedial Action Work Plans, Remedial Designs (viable remedial technologies) and Site Management Plans; application of risk-based corrective action approaches; solid waste, hazardous waste and waste-water collection and treatment system management; indoor air quality surveys; soil vapor intrusion mitigation systems; design and implementation of dewatering systems; and, data evaluations and preparation of reports.

Sean has provided technical support, performed contaminant modeling and has created exhibits in cases of expert witness testimony, and has represented clients before local and state agencies. He is often the liaison between the client and regulatory agencies and is the client representative tasked with citizen participation and public relations issues.

EDUCATION

B.A. in Geosciences, 1999, Franklin & Marshall College, Lancaster, Pennsylvania

TECHNICAL SOCIETIES AND LICENSES

Association of Ground Water Scientists and Engineers (National Ground Water Association)

American Academy of Environmental Engineers (Member)

Certified Professional Geologist – AIPG Member #: CPG-11657
American Institute of Professional Geologists

TECHNICAL SOCIETIES AND LICENSES (continued)

Transportation Worker Identification Credential (TWIC®) Card Holder

Secure Worker Access Consortium (SWAC) – (Membership in Process)
Port Authority of New York and New Jersey

US Coast Guard Captains License (25-Ton Masters) – Merchant Mariner Credential

CERTIFICATION AND SKILLS

OSHA Health and Safety Operations at Hazardous Materials Sites, 29 CFR 1910.120(e) (3), 40 hours, with annual refresher courses

LPA-1 Lead Paint Inspection System (Currently Lapsed)

Extensive knowledge in standards, regulations, and laws of NYSDEC, NYS DOH, EPA, OSHA, NIOSH, and CDC

Excellent computer skills in: MS Office, MS Project, MS Access, ArcGIS, AutoCAD, AQTESOLV, Adobe, and miscellaneous additional programs.

CONTINUING EDUCATION

The New School (NYC) - April 2011
Environmental Law and Science for Policy Analysts and Sustainability Managers
Guest speaker selected to discuss Brownfield regulation and contaminant remediation technologies.

Vapor Intrusion Mitigation Technologies Presentation (By LST) 2012

SUMMARY OF PROFESSIONAL EXPERIENCE

2014:
Associate Vice President at Leggette, Brashears & Graham, Inc., White Plains, New York

2011 to 2013:
Senior Associate at Leggette, Brashears & Graham, Inc., White Plains, New York

2008 to 2010:
Associate at Leggette, Brashears & Graham, Inc., White Plains, New York

2005 to 2007:
Senior Hydrogeologist at Leggette, Brashears & Graham, Inc., White Plains, New York

2002 to 2004:
Hydrogeologist II at Leggette, Brashears & Graham, Inc., White Plains, New York

2000 to 2002:
Hydrogeologist I at Leggette, Brashears & Graham, Inc., White Plains, New York

1999 to 2000:
Project Manager at International Valuation and Inspection Environmental, Inc.
(IVI Environmental)

SOIL, GROUNDWATER AND SOIL VAPOR CONTAMINATION EXPERIENCE AND RESPONSIBILITIES

Sean's career start as a project manager with an environmental consulting firm, performing Phase I Environmental Site Assessments for the purpose of due diligence. This provided him with direct experience of initial evaluations of properties for the purpose of assessing the risk of potential negative environmental impacts. This provided a practical foundation in Site characterization for his future role in development of remedial strategies for contaminated properties.

In the last fourteen years with LBG, Sean has managed and directed a large variety of soil groundwater and soil vapor contamination projects. He has prepared numerous technical reports on groundwater quality investigations and monitoring (as the principal technical editor of all major report sections). Some of Sean's current consulting and hydrogeologic experience and responsibilities (past and current) include:

- performance of ASTM-compliant Phase I ESAs;
- technical, financial, and personnel administration of environmental projects including construction oversight management;
- development of technical scopes of work, work plans, and cost estimates
- environmental permitting;
- subsurface remedial investigation work plan development for collection of subsurface characterization samples (soil, groundwater and soil vapor samples);
- Specification of sampling and analytical testing protocols;
- boring geologic formation evaluation;
- monitor/extraction/delineation/injection well design and installation;
- development of groundwater pumping test work plans and pumping test data evaluation;
- development of dual phase extraction (DPE) pilot tests and combined DPE and air sparge (AS) pilot test work plans and pilot test data evaluation;
- development of dewatering work plans to facilitate soil excavation and structural site development activities;
- underground storage tanks/aboveground storage tank/chemical bulk storage tank registration, deregistration and closure activities;
- remedial alternatives analysis evaluations and feasibility studies;
- development of remedial system design;
- incorporation of alternative strategies to address site-specific geologic conditions (horizontal recovery wells in soils with low hydraulic conductivity);
- implementation of RCRA corrective action measures;
- collection and management of data;
- report preparation and technical review;
- litigation support for evaluation of contaminant fate and transport with respect to offsite impact;
- contaminant modeling to determine contributions for comingled plumes;
- environmental liability risk assessments; and
- third-party oversight; and,
- acting as community and regulatory agency liaison.

SOIL, GROUNDWATER AND SOIL VAPOR CONTAMINATION EXPERIENCE AND RESPONSIBILITIES (continued)

Sean has established a solid practical framework for his project management responsibilities through over 14 years of field work. With LBG, Inc. since 2000, Sean has had the opportunity to work in the environmental field through a period of rapid development of state programs to identify and address groundwater and water supply contamination issues, and apply state-of-the-art policy and technical practices to many site studies. He actively participated with the NYSDEC during the state's transition from the Voluntary Cleanup Program to the current Brownfield Cleanup Program. He managed the soil, groundwater and soil vapor quality components of projects at many sites subject to the directives of the VCP, BCP, RCRA, Superfund, and hazardous waste regulations. Some of Sean's field supervision experience and responsibilities (past and current) include:

- performance of Phase I environmental site assessments for property transactions and for development of subsurface investigations;
- field supervision of Phase II subsurface investigation activities;
- supervision of the installation of monitoring, extraction, delineation and injection wells (via GeoProbe, hollow stem auger, mud rotary, air rotary, jetting/water lifting, bedrock coring, and horizontal drilling);
- remedial construction management;
- supervision of excavation activities (C&D, non-hazardous and hazardous waste);
- C&D, non-hazardous and hazardous waste stream management;
- groundwater treatment and product recovery system engineering;
- Site characterizations using video scoping, electro-tracing and geophysical testing techniques;
- siting and feasibility studies;
- air and water discharge permit acquisition;
- indoor air quality and soil vapor intrusion sampling;
- supervision of short and long-term water and multi-phase pumping tests in consolidated and unconsolidated materials;
- supervision of air sparge and combined air sparge- dual phase extraction pilot tests;
- sampling of water from surface and subsurface sources;
- measurement of in-stream flow and stream shape parameters;
- measurements of groundwater and separate-phase hydrocarbon thicknesses in monitor wells;
- asbestos inspections and lead-based paint surveys.

SPECIFIC EXPERIENCE IN HAZARDOUS WASTE SITE REMEDIATION

Former Paint Manufacturing Facility
Mount Vernon, New York
Brownfield Cleanup Program Site

Project Manager responsible for technical management, environmental assessment oversight, site monitoring and hazardous waste remediation of several areas associated with a former paint and lacquer manufacturing facility including:

- Work plan preparations and collaboration with New York State agency representatives;
- installation of product delineation groundwater monitor wells;
- collection of multiple soil samples from each well location (at 5 foot intervals);
- assessments of soil vapor and indoor air samples for potential indoor air soil vapor intrusion impact;
- removal of interior flooring material (wood and concrete) from historical manufacturing areas to facilitate soil excavations and UST removals;
- design and installation of a sub-slab depressurization system;
- removal/closure of approximately 42 underground storage tanks, ranging in size from 275-gallon to 10-000 gallon capacity;
- excavation of interior 'hot spot' locations to remove free-phase saturated soil;
- management of characterization, disposal and filing requirements for hazardous waste streams generated from the onsite excavation activities (heavy metals, VOCs, polyurethanes);
- administration of a long-term groundwater monitoring program;
- development and implementation of groundwater pumping test work plans and slug test activities to assess onsite hydrogeologic characteristics;
- assessment of the Site geology and hydrogeology to assess remedial alternatives;
- installation of a two horizontal groundwater extraction wells to facilitate groundwater remediation as well as to create a hydraulic barrier at the property line to prevent offsite contaminant migration;
- installation of a horizontal soil vapor extraction well to facilitate remediation of inaccessible residual contaminated soil;
- maintenance of a boom system preventing free-phase leachate from entering an adjacent river.
- development and administration of citizen participation and community awareness activities; and,
- development of an interim remedial measure to perform long-term soil and groundwater remediation.
- development of a comprehensive Site Management Plan; and,
- Completion of annual Site certifications of implemented and functioning Engineering Controls and Institutional Controls.

SPECIFIC EXPERIENCE IN HAZARDOUS WASTE SITE REMEDIATION (continued)

Former Plating Facility
Information Technology High School
Long Island City, New York
Voluntary Cleanup Program Site

Project Manager responsible for technical management, environmental assessment oversight, site monitoring and hazardous waste remediation (heavy metals and chlorinated solvents) of several areas associated with a former metal plating facility (listed as a Class 2 Inactive Hazardous Waste Site) including:

- Work plan preparations and collaboration with New York State agency representatives;
- installation of product delineation and groundwater monitor wells (overburden and bedrock);
- collection and characterization of the subsurface soils;
- assessments of soil vapor and indoor air samples for potential indoor air soil vapor intrusion impact;
- removal of interior concrete slab throughout all of the slab on grade levels of the building;
- performance of 'hot spot' soil excavation activities in the interior of the building to remove soil contaminated with hazardous levels of heavy metals (primarily lead)
- design and installation of a sub-slab depressurization system;
- design and installation of a soil vapor barrier/concrete composite cover for interior restoration;
- design and implementation of a dewatering plan to facilitate the installation of an elevator at an elevation beneath the groundwater table;
- performance of 'hot spot' soil excavation activities in the exterior alleyway (former drum storage area) of the building to remove residual soil contaminated with hazardous levels of tetrachloroethylene (PCE);
- performance of 'hot spot' soil excavation activities in the exterior courtyard of the building to remove soil contaminated with hazardous levels of lead;
- management of characterization, disposal and filing requirements for hazardous waste streams generated from the onsite excavation activities (heavy metals and chlorinated solvents);
- administration of a long-term groundwater monitoring program;
- hydrogeologic assessment of the Site geology to assess remedial alternatives:
- installation of a two horizontal groundwater extraction wells to facilitate groundwater remediation as well as to create a hydraulic barrier at the property line to prevent offsite contaminant migration;
- installation of a combined remedial system incorporating sub-slab depressurization, soil vapor extraction wells and groundwater extraction to facilitate remediation of inaccessible residual contamination as well as protecting the indoor air from soil vapor intrusion;
- development and administration of citizen participation and community awareness activities;
- development of a comprehensive Site Management Plan; and,
- Completion of annual Site certifications of implemented and functioning Engineering Controls and Institutional Controls.

SPECIFIC EXPERIENCE IN HAZARDOUS WASTE SITE REMEDIATION (continued)

Dry Cleaners
Staten Island, New York
Voluntary Cleanup Program Site

Project Manager responsible for technical management, environmental assessment oversight, site monitoring and hazardous waste remediation (chlorinated solvents) of several areas associated with a former dry-cleaning facility (listed as a Class 2 Inactive Hazardous Waste Site) including:

- Work plan preparations and collaboration with New York State agency representatives;
- installation of lateral delineation groundwater monitor wells as well as vertical delineation cluster groundwater monitor wells;
- collection and characterization of the subsurface soils;
- assessments of soil vapor and indoor air samples for potential indoor air soil vapor intrusion impact;
- development of a horizontal trench SVE pilot test to assess feasibility of exterior SVE to address potential soil vapor intrusion issues as well as to remediate the residual vadose zone contamination;
- design and installation of a soil vapor barrier/concrete composite cover for mitigation of soil vapor intrusion issues;
- management of characterization, disposal and filing requirements for hazardous waste streams generated from the onsite excavation activities (heavy metals and chlorinated solvents);
- administration of a long-term groundwater monitoring program;
- background research of historical surface water features and local utility features potentially impacting subsurface groundwater flow paths;
- hydrogeologic assessment of the Site geology to assess remedial alternatives;
- development of a comprehensive Site Management Plan; and,
- Completion of annual Site certifications of implemented and functioning Engineering Controls and Institutional Controls.

SPECIFIC EXPERIENCE IN HAZARDOUS WASTE SITE REMEDIATION (continued)

Former Paint Manufacturing Facility
Brooklyn, New York
Voluntary Cleanup Program Site

Project Manager responsible for technical management, environmental assessment oversight, site monitoring and hazardous waste remediation of a former paint and lacquer manufacturing facility. The remedial investigation and cleanup activities have been and continue on the Site property as well as adjacent and surrounding properties due to offsite contaminant migration. Several specific key project responsibilities include:

- Work plan preparations and collaboration with New York State and New York City agency representatives;
- installation of product delineation wells and groundwater monitor wells;
- collection and characterization of the subsurface soils;
- assessments of soil vapor and indoor air samples for potential indoor air soil vapor intrusion impact;
- implementation of interim remedial measures to address significant contaminant source material (soil, dissolved phase and free phase product);
- removal of interior concrete flooring to facilitate soil excavation and UST removals;
- excavation of interior 'hot spot' locations via trench-box support to remove free-phase saturated soil;
- design and installation of a sub-slab depressurization system;
- removal/closure of 5 underground storage tanks, ranging in size from 1,080-gallon to 1,500 gallon capacity;
- design and installation of a soil vapor barrier/concrete composite cover for interior restoration;
- management of characterization, disposal and filing requirements for hazardous waste streams generated from the onsite excavation activities (heavy metals and VOCs);
- administration of a long-term groundwater monitoring program;
- development and implementation of groundwater pumping test work plan to assess onsite hydrogeologic characteristic;
- hydrogeologic assessment of the Site geology to assess remedial alternatives:
- development of dual phase extraction (DPE) pilot tests and combined DPE and air sparge (AS) pilot test work plans and pilot test data evaluation;
- development and implementation of a community wide soil vapor intrusion sampling round;
- development and administration of citizen participation and community awareness activities;
- development of final remedial design for long-term soil, groundwater, free phase product and soil vapor remediation;
- development of a comprehensive Site Management Plan; and,
- Completion of annual Site certifications of implemented and functioning Engineering Controls and Institutional Controls.

SPECIFIC EXPERIENCE IN HAZARDOUS WASTE SITE REMEDIATION (continued)

Former Coal-Fired Power Station
Brooklyn, New York
Brownfield Cleanup Program Site

Project Manager responsible for acquiring the initial service contract, as well as technical management, environmental assessment oversight, site monitoring and hazardous waste remediation (PCBs, heavy metals, VOCs and SVOCs) of several areas associated with a former coal-fired power station. Several specific key project responsibilities include:

- completion of a preliminary Site environmental remedial cost impact assessment to evaluate the feasibility and potential liability of the property transaction;
- preparation of an initial interim remedial measures cost estimate to evaluate initial cleanup phase costs to address the majority of the onsite contamination 'hot spots';
- development and administration of citizen participation and community awareness activities;
- collaboration with various New York State and New York City agency representatives;
- Evaluation of multiple historical resources to develop a site development and use history for the purpose of identifying potential site areas for focusing remedial effort;
- detailed preparations to complete the required Remedial Action Work Plan outlining the future clean-up activities at the Site, including:
  - installation of product delineation wells and groundwater monitor wells;
  - development of all QQ/QC procedures of the completion of the project;
  - development of waste handling and decontamination procedures for the project;
  - development of a detailed work plan for sheeting (excavation support) and performing dewatering to facilitate the excavation of TSCA hazardous PCB contaminated soil at depth (20 ft bg);
  - development of site reconstruction plans and procedures;
  - development and implementation of required design investigation activities (slug tests, pumping test…);
  - development of site remedial alternatives analysis;
- management of characterization, disposal and filing requirements for hazardous waste streams generated from the onsite excavation activities (PCBs, heavy metals, VOCs and SVOCs);
- hydrogeologic assessment of the Site geology to assess remedial alternatives
- development of final remedial design;
- installation, implementation and OM&M of a potential long-term remedial system;
- administration of a long-term groundwater monitoring program;
- hydrogeologic assessment of the Site geology to assess remedial alternatives:
- development of a comprehensive Site Management Plan; and,
- Completion of annual Site certifications of implemented and functioning Engineering Controls and Institutional Controls.

SPECIFIC EXPERIENCE IN HAZARDOUS WASTE SITE REMEDIATION (continued)

Former Paint Manufacturing Facility
Brooklyn, New York
RCRA Facility Closure Activities

Project Manager responsible for acquiring the initial service contract, as well as technical management, environmental assessment oversight, site monitoring and hazardous waste management for activities related to the RCRA closure activities for a former paint and lacquer manufacturing facility. Several specific key project responsibilities include:

- Negotiations with the New York State and Federal representatives to ensure the client maintained the authority to manage the RCRA Closure activities;
- RCRA Closure Work Plan preparations and collaboration with New York State, New York City and federal US EPA agency representatives;
- Oversight for the characterization, waste disposal facility locating, and waste disposal activities for over 200 drums of RCRA waste with varying waste classifications (and hazardous waste characteristics);
- Management of Chemical Bulk Storage (CBS) tanks associated with historical manufacturing activities;
- management of characterization, disposal and filing requirements for hazardous waste streams generated from the closure activities (heavy metals and VOCs);
- negotiations and acquisition of a site-specific waiver for waste consolidation to minimize disposal costs associated with like wastes;
- acquisition of required permits to facilitate all closure activities;
- project coordination with client and additional responsible parties (financial guarantor and legal representatives); and,
- Completion RCRA Closure Summary Report.

SPECIFIC EXPERIENCE IN SURFACE WATER

Westchester County, New York

Completion of volume calculations for a local watershed drainage-basin and a subsequent impact assessment. This was completed to evaluate potential sheet-flow runoff values for impact to a downgradient property.

Westchester County, New York
Golf Course Monitoring

Performance of stream flow calculations via cross-sectional flow analysis as well as by using weir calculations. The stream flow calculations were used in conjunction with surface water laboratory analytical results to assess potential impact to the surface water from the golf course operations.

Various Sites in New York

Completion of, and implementation of, Storm Water Pollution Protection Plans (SWPPP) for various construction sites. These SWPPPs include the institutional controls for ensuring proper management of Site activities as well as the installation and operation of project-specific infrastructure to ensure proper materials management.

SPECIFIC EXPERIENCE IN AIR QUALITY INVESTIGATIONS

Project Sites:

New Rochelle, New York
LBG performed an assessment of an industrial building located downgradient of a listed BCP Site. The upgradient Site is responsible for a chlorinated solvent plume that is migrating beneath the Site. LBG performed additional subsurface characterization activities to characterize the onsite extent of the contamination. To ensure protectiveness of the indoor air quality, LBG designed and installed a lateral trench sub-slab depressurization system to prevent the build-up of chlorinated solvent vapors beneath the building slab. Although the SSDS piping network was installed with the intent to be passive, it was designed with connections which enable connection to a portable vacuum blower for periodic active high vacuum extraction quantitative dye trace activities to determine discharge paths for interior utility pipes; water jetting video scoping activities; interior and exterior excavation activities to repair utility pipes/conduits.

Cortlandt Manor, New York
Performed a Property Impact Assessment (PIA) to evaluate potential property exposure from metals migrating onsite as wind-blown dust in ambient air from an adjacent landfill. The air sampling consisted of dust wipe sample from the interior and exterior of the onsite building/structure as well as active air sampling from an air sampling station.

Industrial Hygiene Monitoring
Marshall, Michigan
Responsible for the management of monitoring personnel to provide a safe environment for the petroleum spill cleanup activities. Responsible for the collection of personal benzene air samples as well as multi-gas monitoring to ensure safe work environments for employees during cleanup work.

Indoor Air Quality Studies
New York City Public High School
Coordinated and conducted numerous indoor air quality studies at various locations as part of the Site Management Plan. The indoor air quality surveys were the result of nuisance odors observed throughout the school that impacted normal function. Responsible for the review of data and reports.

Indoor Air Quality Study
Mamaroneck, New York
Responsible for conducting an indoor air quality study for nuisance odors within a single family residence associated with a petroleum spill at an adjacent gasoline station. Responsible for the review of data and reports.

Soil Vapor Intrusion Investigations
Multiple Sites in New York
Responsible for the development and performance of soil vapor intrusion investigations associated with BCP and VCP sites. The results of the investigations are reviewed and presented in report format with a comparative analysis using the NYS Dept. of Health indoor air guidance document for indoor air soil vapor intrusion. Where necessary, LBG developed and implemented mitigation actions to ensure protectiveness at respective Sites.

SPECIFIC EXPERIENCE IN PETROLEUM SPILL CLEANUP RESPONSE

Project Sites:

Dobbs Ferry, New York
Conduct emergency response investigation and coordinate cleanup in response to a fuel oil above ground storage tank overfill at a commercial building. The project involved management of interactions with multiple state and local agencies. The spill impacted commercial spaces of which several hundred people frequented daily. As a result, company operation shut-downs were required. LBG directly performed tasks including, but not limited to: project management, field supervision, data evaluation, waste consolidation and disposal, health and safety and decontamination oversight.

Marshall, Michigan
Conduct emergency response investigation and coordinate cleanup in response to pipeline spill. All activities were performed under multiple regulatory agencies. As a representative of LBG, the primary responsibility was for fulfilling the role of operations inspector. This role required the management and coordination of 4-20 contract personnel involved in the cleanup of submerged oil recovery along the Kalamazoo River. In addition to the field management, responsibilities also included participating in the development of daily operation assignments as well as daily periodic progress updates and end-of-day progress meetings. Due to the nature of the contamination as well as the regulatory requirements, health and safety monitoring was a continuous aspect of the project. At times, this resulted in required decontamination activities, for which LBG was responsible for the oversight.

SPECIFIC EXPERIENCE IN PROPERTY TRANSFER ASSESSMENTS

Project Sites and Responsibilities:

Phase I Environmental Site Assessments
Project Manager responsible for the completion of over 100 Phase I ESAs in New York, New Jersey and Connecticut. Projects performed for various lending institutions, developers, governmental agencies, private property owners, non–profit organizations, and others. The Phase I ESAs were prepared in accordance with the American Society for Testing & Materials (ASTM) standard E1527–05 and the All Appropriate Inquires (AAI) where applicable. In addition, many of the ESAs have been completed in accordance with client specific needs to augment the ASTM standard. When applicable, Phase II ESAs have been designed and implemented based on the findings of the Phase I ESAs.

New York, New York
Performed Phase I Environmental Site Assessment for a 42-story office building in New York City's Financial District. Included in the assessment was asbestos sampling and lead-based paint analysis.

Due Diligence for a Multiple Property Portfolio Transactions
White Plains, New York
Performed Phase I Environmental Site Assessments for multiple office park buildings to facilitate a property portfolio sale. The results of the status reviews for these sites were used in the determination of action for the transaction.

Due Diligence for a Multiple Property Portfolio Transactions (East Coast)
Provided file review for historical environmental reports that were available for multiple sites that were the part of a property portfolio sales transaction. The results of the status reviews for these sites were used in the determination of action for the transaction.

Detroit, Michigan
Performed a detailed asbestos survey for multiple-apartment building complex for Department of Housing and Urban Development (HUD).

SPECIFIC EXPERIENCE IN LITIGATION SUPPORT

Hauppauge, New York

Analysis of an industrial facility and a dry cleaners with multiple and overlapping plumes of chlorinated solvents. The project analysis consisted of trying to determine the source and origin of the various plumes constituents and reviewing of many project investigation and characterization documents. Additionally, LBG developed calculations of contaminant mass contribution volumes to determine client responsibility. The site assessment also incorporated groundwater modeling using the Quick Domenico (QD) analytical fate-and-transport model to predict downgradient concentrations and the resultant contribution to the comingled contaminant plume.

SPECIFIC EXPERIENCE IN GROUNDWATER CONTAMINATION

Project Sites and Responsibilities:

Brooklyn, New York
Project hydrogeologist for a step-pumping test of two newly redeveloped recovery wells. An investigation and remediation project at a former petroleum terminal underlain by several million gallons of free-phase product. Activities included supervising the installation of groundwater monitor wells, geologic sampling, recovery-well step testing and shut-down testing. Responsibilities included monitoring and adjusting pump rates and analysis of pumping test data with respect to specific capacity of the recovery wells.

Massapequa, New York
Conducted a remedial investigation and designed/installed a treatment system at a private residence. Activities included subcontractor coordination and supervision, application of bioremediation product and report preparation.

Oceanside, New York
Project hydrogeologist for an investigation project at a former petroleum bulk storage facility. Acquired soil samples at limited access sites using the hand-auger technique. Installed micro-wells for groundwater sampling.

New York, New York
Project Hydrogeologist for a 4-well dewatering project. The project Site (adjacent to the East River) required installation of four 8-ingch diameter dewatering wells and SPDES discharge permitting. The dewatering activities were performed over a 2-week period.

Brian Hawe's hydrogeologic experience includes collection of soil and groundwater samples; drilling supervision and sampling during the installation of groundwater monitor and recovery wells; development and test pumping of recovery wells, monitor well design; air-sparging (AS)/soil-vapor extraction (SVE) system maintenance; supervision of underground storage tank (UST) and hazardous soil removal; and, installation of soil vapor sampling points.

Brian's field supervision duties include the installation of monitor and bedrock wells by using hollow-stem auger and air rotary; and the installation of horizontal wells using horizontal drilling techniques. In addition to well installation, Brian has supervised short and long-term pumping tests from environmental extraction wells and water supply wells.

EDUCATION

B.S. in Environmental Science, minor in Geology, 2003, University of Delaware, Newark, Delaware

CONTINUING EDUCATION

Health and Safety Operations at Hazardous Materials Sites, 29 CFR 1910.120(e) (3), 40 hours, with annual updates

SUMMARY OF PROFESSIONAL EXPERIENCE

2013 to present:
Senior Hydrogeologist at Leggette, Brashears & Graham, Inc., White Plains, New York

2005 to 2012:
Hydrogeologist at Leggette, Brashears & Graham, Inc., White Plains, New York

2004 to 2005:
Field Technician at Baltec, Inc., Brewster, New York

SPECIFIC EXPERIENCE IN GROUNDWATER CONTAMINATION

Mount Vernon, New York
Supervised the Voluntary Cleanup of a Brownfield property involving the removal of USTs, excavation of contaminated soil, installation of both horizontal and vertical monitoring wells, installation of soil vapor sampling points, supervision of several pumping tests and reconstruction activities.

Rochester, New York
Completed Phase I Environmental Site Assessment on 2.1 million square foot facility.

Multiple Locations
Supervised UST removal as well as soil excavation; and, gauged and sampled monitor wells.

David Morelli's hydrogeologic experience includes collection of soil and groundwater samples; drilling supervision and formation sampling during the installation of groundwater monitor and recovery wells; development and test pumping of recovery wells; monitor well design; design, installation and maintenance of a watershed monitoring system, combined air-sparging/soil-vapor extraction (AS/SVE) system, and multi-phase extraction (MPE) system design and maintenance; supervision of underground storage tank (UST) and hazardous soil removals; and soil-vapor surveys.

David's field experience includes installation of monitor wells, bedrock wells and test wells by the hollow-stem auger, mud-rotary, air rotary and rock coring methods of drilling; development and redevelopment of recovery wells; supervision of short and long-term water and multi-phase pumping tests in consolidated and unconsolidated materials. In addition, he has conducted sampling of water from surface and subsurface sources, measurement of water levels and separate-phase hydrocarbon thicknesses in monitor wells; measurement of in-stream flow and stream shape parameters.

EDUCATION

M.S. in Geological Oceanography, 2002, University of Rhode Island, Graduate School of Oceanography, Narragansett, Rhode Island

B.S. in Geology, 1999, University of Rhode Island, Kingston, Rhode Island

CONTINUING EDUCATION

Health and Safety Operations at Hazardous Materials Sites, 29 CFR 1910.120(e) (3), 40 hours, with annual updates

SUMMARY OF PROFESSIONAL EXPERIENCE

2006 to present:
Senior Hydrogeologist at Leggette, Brashears & Graham, Inc., White Plains, New York

2002 to 2005:
Hydrogeologist II at Leggette, Brashears & Graham, Inc., White Plains, New York

SPECIFIC EXPERIENCE IN GROUNDWATER CONTAMINATION

Cedarhurst, New York
Project hydrogeologist for several subsurface investigations and remediation projects at an active gasoline station. Activities include supervision of groundwater monitor well installation, soil sample collection, groundwater sample collection and product recovery.

Palatine Bridge, New York
Project hydrogeologist for the delineation of a volatile organic compounds source plume from an active filling station. Supervised field investigations using the geoprobe drilling technique, collected soil and groundwater samples and prepared a subsurface investigation report.

Schenectady, New York
Project hydrogeologist for multi-phase extraction remediation project. Activities include groundwater sampling, sampling of remediation system fluids, operation and maintenance of multi-phase extraction remediation system.

Schenectady, New York
Project hydrogeologist for several subsurface investigations and remediation design projects at an active gasoline station. Activities included supervision of groundwater monitor well installation, soil sample collection, groundwater sample collection and product recovery.

SPECIFIC EXPERIENCE IN PROPERTY TRANSFER ASSESSMENTS

New Jersey, New York and Connecticut

Completion of site inspections and reporting for property transfer Environmental Site Assessments (ESA) since 1999. Typically these ESAs are completed in accordance with the ASTM Standard E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. In addition, many of the ESAs have been completed in accordance with client specific needs to augment the ASTM standard. When applicable, Phase II ESAs have been designed and implemented based on the findings of the Phase I ESAs. ESAs have been prepared for clients seeking financing to purchase real property for investigation purposes and selling real property.

New York, New York

Performed Phase I Environmental Site Assessment for a 42-story office building in New York City's Financial District. Included in the assessment was asbestos sampling and lead-based paint analysis.

Detroit, Michigan

Performed a detailed asbestos survey for multiple-apartment building complex for Department of Housing and Urban Development (HUD).

Long Island City, New York

December 2000 to present. Supervised a Voluntary Cleanup Program and was responsible for project management, including subsurface investigation, groundwater sampling, hazardous waste removal, vapor barrier design, remedial system design, construction and implementation, operation and maintenance, and was responsible for the Health and Safety of onsite personnel. Also responsible for conducting a Community Air Monitoring Program, consisting of real-time air monitoring of volatile organic compounds and particulate concentrations.