MACAULEY (MIKE) WHITING, JR.
BIOGRAPHICAL INFORMATION

Born: March 17, 1957 in Midland, Michigan

Education

- High school: The Hotchkiss School, Lakeville, Connecticut, cum laude, in 1975

- Batchelor of Science in Engineering degree in Chemical Engineering, cum laude, from Princeton University in 1978; senior thesis on the subject of the separation of tritium from liquid lithium, an aspect of hydrogen fusion power generation

Work Experience

- Summers of 1975–77: Dow Chemical Company in Midland, Michigan and Rheinmünster, Germany

- 1978–82: Senior Research Engineer, Dow Chemical Company in Freeport, Texas: Resins Technical Service & Development and Hydrocarbons & Energy Research, working on the development of the Dow coal gasification process, now known as the E-Gas technology

- 1982–present: Co-founder, President and Chief Executive Officer of Decker Energy International, Inc. of Winter Park, Florida, which develops, acquires, owns, and operates environmentally-friendly power generating facilities, especially those using renewable resources; direct involvement in all aspects of the development or acquisition and management of 7 biomass power plants with a combined capacity of 243 megawatts, as well as 8 natural gas-fired power generating projects totaling 820 megawatts of capacity

Daniel J. Donovan

Mr. Daniel Donovan - founder and Managing Member of Prospero LLC., a merchant bank located in Westport, Connecticut. Mr. Donovan has been actively involved in the financing of energy and technology transactions both in the United States and abroad for over 25 years. Mr. Donovan's clients include project developers, equipment manufacturers and early stage technology and service providers in the renewable energy market.

Mr. Donovan has spent ten years in the engineering and technical consulting industry at Exxon Research and Fluor Corporation. He spent a similar length of time employed in the financial services industry with Kendall Capital Partners, CS First Boston and Merrill Lynch concentrating on corporate and project funding. Since starting Prospero LLC over 8 years ago, Mr. Donovan has been an advisor to a number of large scale renewable energy projects and is actively involved in the development of this market.

Mr. Donovan holds a Master of Business Administration from the Wharton School at the University of Pennsylvania, a Master of Engineering from the University of California/Berkeley and a Bachelor of Science from the University of Massachusetts. Mr. Donovan is a licensed Professional Engineer in the State of California and holds NASD Series 7, 24 and 53 certifications.

Work Experience

Prospero LLC/Prospero Holdings LLC/Prospero Capital LLC
Managing Member – 1998 to Present

Financial and development advisor to renewable energy projects including biomass, fuel cell and biodiesel projects. Responsibilities included the management of all aspects of the project development process.

Merrill Lynch, Pierce, Fenner & Smith Incorporated
Director – 1994 to 1998

Investment banking focused on corporate, structured and project financings for domestic and international clients. Undertook energy related transactions in Latin America, Europe and India; as well as domestic industrial and infrastructure financings.

CS First Boston
Director – 1992 to 1994

Investment banking focused on providing capital market funding to the independent power industry.

Kendall Capital Partners LP
Managing Director – 1990 to 1992

Partner in a boutique investment bank focused on structured finance transactions. The firm was among the top three financial advisors in the independent power sector in 1991 and successfully structured some of the largest transactions in this market. The firm was sold to CS First Boston in 1992.

Combustion Engineering, Inc/ABB Inc
Director – 1988 to 1990

Responsible for the structuring, funding and divestiture of the firm's participation in a variety of joint venture projects. Transactions completed in the power, paper and waste to energy sectors.

Fluor Corporation
Manager – 1983 to 1988

Exxon Research and Engineering
Project Engineer – 1978 to 1981

Education

University of Pennsylvania/Wharton School
Philadelphia, Pennsylvania
Master of Business Administration

University of California/Berkeley
Berkeley, California
Master of Engineering, Civil Engineering

University of Massachusetts/Amherst
Amherst, Massachusetts
Bachelor of Science, Civil Engineering

M.I. HOLZMAN
& ASSOCIATES, LLC

Environmental Engineering ■ Impact Assessment ■ Compliance Services

MICHAEL I. HOLZMAN

EDUCATION

1985	M.S., Illinois Institute of Technology, Environmental Engineering
1982, 1983	Stevens Institute of Technology and New Jersey Institute of Technology, graduate courses in Chemical Engineering
1981	B.S., University of Pennsylvania, Bioengineering/Environmental Engineering

SUMMARY OF EXPERIENCE

Mr. Holzman is founder and Principal of M.I. Holzman & Associates, LLC. He provides project management and technical expertise on projects concerning multi-media environmental permitting and impact studies, Clean Air Act regulatory compliance, air pollution control engineering, air quality impact assessment, air toxics assessments, chemical accident prevention, process safety management, odor evaluations, emissions testing, health risk assessments, pollution prevention and environmental compliance audits. Mr. Holzman has over 23 years experience in environmental consulting and air pollution control engineering. As a consultant, Mr. Holzman has served a variety of industries including waste-to-energy, independent power, cogeneration, merchant power, utility power, chemical/pharmaceutical manufacturing, coating, converting, printing, textiles, hardware manufacturing, brick manufacturing, asphalt, cement, automobile and automotive parts manufacturing, aircraft maintenance and component manufacturing, wastewater treatment, and municipal and industrial landfills. As an applications engineer for an air pollution control equipment manufacturer, Mr. Holzman designed, marketed, and managed installation contracts for a variety of air pollution control systems. Mr. Holzman is also an adjunct professor since 1997 at the University of Hartford, teaching a graduate engineering course on advanced air pollution control engineering.

Representative project experience:

- Assisted more than 50 facilities to comply with various requirements of the 1990 Clean Air Act Amendments. Services provided include: compiling emission inventories, evaluating compliance status, determining applicability of regulatory requirements, developing BACT, RACT, MACT and LAER compliance plans, and preparing Title V operating permit applications, Title IV Acid Rain Permit applications, Title IV Monitoring Plans, and NO_x Budget Monitoring Plans.
- Managed multi-media permitting of more than 40 merchant power, independent power, cogeneration and waste incineration plants in 12 different states, including preparation of environmental impact statements, air permit applications, water discharge permit applications, and air quality, noise, traffic, and visual impact assessments.
- Developed air permit applications for waste incineration, merchant power, cogeneration, electrical utilities, universities, hospitals and a wide variety of manufacturing facilities. This work included emissions characterization, air quality impact (dispersion modeling) analyses and Best Available Control Technology (BACT) and Lowest Achievable Emission Rate

57 Mountain View Drive
West Hartford, CT 06117-3028

Phone: 860-523-8345
Fax: 860-523-8394
Mholzman2@comcast.net

(LAER) analyses for gas turbines, wood- and biomass-fired boilers, municipal and medical waste incinerators, fossil fuel boilers, reciprocating engines and a wide variety of other process and manufacturing sources.

- Performed air quality impact assessments and prepared environmental impact reports evaluating proposed LNG and LPG terminal in the Bahamas and associated pipeline construction between the Bahamas and southeast Florida. Tasks included developing modeling input and performing refined dispersion modeling for multiple gas turbines, reciprocating engines, process flares and tanker ship loading/unloading operations at the proposed offshore terminal as well as numerous marine vessels and specialized pipeline installation equipment along the pipeline construction route, both offshore and inland.
- Conducted air quality impact analyses and performed reviews of environmental impact assessments for international projects subject to World Bank or International Finance Corporation guidelines for conducting Environmental Impact Assessments (EIA). This work has included air emissions inventory development, screening and refined dispersion modeling, and assessment of compliance with World Bank Guidelines.
- Performed control technology evaluations, developed bid specifications, evaluated proposals and made recommendations for air pollution control equipment for numerous manufacturing operations.
- Provided technical review and expert witness services on air pollution and air quality impact issues to attorneys representing industries, municipalities, and citizen groups in support of hearings, litigation and arbitration cases.
- Evaluated fugitive particulate emissions and impacts from mineral mining and processing operations, including sand and gravel, cement, brick, and asphalt production plants.
- Performed hazard assessments, offsite consequence analyses and prepared risk management plans, prevention programs, and emergency response plans for industrial manufacturing plants, propane storage facilities and water and wastewater treatment plants.
- Performed numerous environmental compliance audits for a variety of industries, including municipal and medical waste incinerators, power plants, chemical and other manufacturing plants.
- Contributor to several research programs sponsored by New York State Energy Research and Development Authority concerned with the environmental implications of waste wood combustion and gasification. Managed pilot-scale and full scale combustion testing programs to evaluate combustion characteristics, ash composition and air emissions from several waste wood and non-fossil fuel mixtures.
- Developed specifications and evaluated proposals for complete retrofit air pollution control system for municipal solid waste incineration facility.
- Performed health risk assessments for waste wood-fired power plants and hazardous waste treatment, storage and disposal facilities.
- Performed assessments of air toxic emissions from paper mills, chemical manufacturing plants, brick manufacturing facilities, hazardous waste treatment, storage, and disposal facilities, a rifle manufacturing facility and municipal solid waste landfills.
- Performed feasibility study, treatability study, and process design for treatment of industrial liquid wastes at landfill site to allow discharge to sewer.

- Evaluated hazardous waste management and pollution prevention strategies for an automobile manufacturer, aircraft maintenance facilities, and aircraft parts manufacturing plants.
- Designed air pollution control system for PCB pyrolysis unit including gas cooling, particulate removal, hydrochloric acid recovery, and afterburner.

PRIOR EXPERIENCE

Prior to founding M.I. Holzman & Associates, LLC, Mr. Holzman most recently served as Associate Principal and Manager of Environmental Risk Limited's (ERL) Air Quality Services group. His tenure at ERL was nearly 13 years, 7 of which serving as Manager of Air Quality Services. Prior to working at ERL, Mr. Holzman was an environmental engineer with Dames and Moore Group, an international environmental consulting company, and an applications engineer for Croll-Reynolds Company, an air pollution control equipment manufacturer.

PROFESSIONAL AFFILIATIONS

Air and Waste Management Association
Connecticut Power and Energy Society
Connecticut Business and Industry Association
Connecticut State Implementation Plan Revision Advisory Committee
Northeast Energy and Commerce Association

PUBLICATIONS/PRESENTATIONS

"Ten Years After the Clean Air Act Amendments: Are We Done Yet?" New England's Environment, Environment NewsMagazines, Inc., July 1999.

"Environmental Permitting of A New Generation Merchant Power Plant in the Northeast" Power-Gen International Conference, December 1998.

"Municipal Sludge Composting Facility Emissions - Comparison of Wet Scrubber and Biofiltration Control Performance" 90th Annual Meeting of the Air and Waste Management Association, 1997.

"Results of Air Emissions Testing of Two Small Wood-Chip Fired Furnaces in Vermont," Second Biomass Conference of the Americas, 1995.

"Emissions From Combustion of Treated Wood Fuel and Tires in Industrial Boilers," 88th Annual Meeting of The Air and Waste Management Association, 1995.

"Database of Hazardous Air Pollutant Emissions from Waste Wood Fired Boilers," 86th Annual Meeting of The Air and Waste Management Association, 1993.

"Ability to meet Air Quality Standards When Burning Treated Wood" , 5th Annual National Biofuels Conference, 1992.

"Regulation of Chromium Emissions Through CTDEP's Hazardous Air Pollutant Control Program," for Presentation at Connecticut Association of Metal Finishers Seminar on Air Quality Regulations, 1990.

"Recent BACT Determinations for Small Power Plants and Cogeneration Facilities," Proceedings of Conference on Air Quality Issues Pertaining to Power Production, Air and waste Management Association, New England Section, 1989.

"Retrofitting Acid Gas Controls on Operating Refuse Incinerators," for presentation at the 81st Annual Meeting of the Air Pollution Control Association, 1988.

"Development of a VOC Compliance Strategy for an Adhesive Coating Manufacturer Through Implementation of an Alternative Emissions Reduction "Bubble" Plan," for presentation at the AWMA Specialty Conference on 0_3 Control Strategies, 1987.

"Application and Evaluation of Four Regression Techniques for a Chemical Mass Balance Receptor Model," for presentation at the 79th Annual Meeting of the Air Pollution Control Association, 1986.

EXPERT WITNESS/PRESENTATION EXPERIENCE

- Adjudicatory hearing in support of permit for modification of an existing regional recycling facility (CRRA, Hartford, CT). Provided testimony on mobile source emissions, air pollution controls, air quality impacts, and air pollution regulations.
- Expert witness on behalf of an asphalt paving company in a civil case, involving air quality impacts due to fugitive emissions.
- Public informational meeting on air quality impacts from proposed 37.5 MW biomass energy project in CT (Plainfield Renewable Energy LLC).
- Adjudicatory hearing and informational meetings in support of permits for the reactivation of an oil-fired power plant in New Haven, CT (Quinnipiac Energy LLC). Provided testimony on power plant emissions, air pollution controls, air quality impacts, and air pollution regulations.
- Adjudicatory and informational hearings (520 MW Merchant Power Plant in Bridgeport, CT).
- Adjudicatory hearings before the CTDEP in support of permits for a wood-fired power plant. Provided testimony on emissions, controls, air quality impacts, health risk analysis, air pollution regulations (Killingly Energy Limited Partnership).
- Local zoning hearing on air quality impacts of cogeneration facility in Fresno, California.
- Local zoning hearing on odor and noise impacts/ mitigation regarding the proposed expansion of an industrial facility in Avon, CT.
- Public hearings on air quality impacts of proposed wood/coal fired power plant in Chicago, IL.
- Deposition on behalf of a furniture refinishing operation on indoor air quality impacts on an adjacent machine shop.
- Expert witness on behalf of the Town of Colchester, CT on air quality impacts of proposed asphalt plant.
- Public informational meeting on air quality impacts from proposed 500 MW Merchant Power Project in NY.

MARK M. ZESSIN, P.E.

PROFILE

Mr. Zessin has been responsible for planning, design and project management on a broad set of publicly and privately developed projects. Mr. Zessin has over twenty years of engineering design experience and he is licensed to practice engineering in four states. He has gained considerable insight into the requirements of regulatory agencies for environmentally sensitive and controversial projects.

WORK EXPERIENCE

1993 - Present **Anchor Engineering Services, Inc.**
President, Principal Engineer
Project Manager/Principal Engineer for private and public development projects including various land uses. Provide consulting services through all phases of project development and facility operations. Development of private site developments, solid waste management facilitys, municipal facilitys, wastewater and stormwater management programs to meet owners' needs and regulatory requirements. Provided technical services on permitting, design and construction projects. Project Manager for the design of two wastewater pre-treatment systems, and public water pump station owned by the Connecticut Water Company.

1991 - 1993 **Connecticut Resources Recovery Authority (CRRA)**
Senior Environmental Engineer
Provided design and technical analysis for numerous projects including landfills, transfer stations, recycling facilities, wastewater discharge permits, and research projects. Responsible for road relocation design for several landfill expansions. Prepared layout and grading design for site improvement projects, transfer stations and landfills.

1988 - 1991 **Fuss and O'Neill, Inc.**
Project Engineer
Primary staff engineer for various site development and public use projects, engineer for site and utility functions on large projects. Responsible for environmental, zoning and wetlands permitting; responsible for drainage, sanitary sewer, water, and facility layout and design. Designed and managed small and medium sized projects.

1984 - 1988 **Connecticut Department of Transportation**
Transportation Engineer
Transportation Engineer in the Division of Design and Municipal Systems Section. Responsible for roadway geometry, layout, appurtenance and hydraulics design. Coordinated projects with private landowners and local, state and federal agencies.

REPRESENTATIVE PROJECTS

92 Unit Condominium with 3,000 feet of sewer, storm drains, water supply and water pump station - Stafford
Community Child Guidance Clinic, Site Layout, Grading and Utilities - Manchester
Gallary Cinemas, 195 car parking lot, storm drains, water supply, sewer, sewage pump station – Colchester
Project Included Detention Basin, Inland Wetland, Zoning and CT DOT Encroachment Permit
Municipal Transfer Station Design, Permitting and Construction Administration - Town of Waterford
Landfill Leachate Pre-Treatment System - Town of Windham
Buckland Hills Mall and Mixed-Use Developments – Design of Water, Sewer, and Storm Drains
Proposed Private Bulky Waste Processing Facility – Utility, Inland-Wetlands and Zoning
Drainage Improvements Route 121, Orange – Drainage Layout Design and Computations
Two Regional Materials Processing Facilities - Sewer, Water Main, and Storm Drainage – Groton, Willimantic
Subdivision Design – Lebanon, Manchester, Windham, Essex

EDUCATION

- M.A., Public Policy Studies, Trinity College – Hartford, Connecticut
- B.S., Civil Engineering, University of Connecticut – Storrs, Connecticut

75 NUTMEG LANE • GLASTONBURY, CT 06033 • PHONE (860) 633-8770 • FAX (860) 633-5971

TESTIMONY FOR THE PUBLIC RECORD

Mr. Zessin has provided expert witness testimony in court in the following cases: *Lathrop vs. Town of Lebanon, MEI vs. State of Connecticut, et al* and *State of Connecticut v. City Recycling, State of Connecticut v. Design Land Developers of Newtown* and he has provided depositions in several other cases. Mr. Zessin has provided testimony for the public record before many agencies including the following: The CTDEP *Newtown Landfill* and *Shelton Landfill*, and over fifty other local boards and commissions. These boards and commissions include: Board of Selectman, Board of Finance, Municipal Zoning Board of Appeals, Municipal Inland Wetlands Agencys, Municipal Conservation Commissions, Municipal Water Pollution Control Authoritys, Municipal Planning Commissions, Municipal Zoning Commissions, the Greater Hartford Flood Commission and combined municipal commissions.

REGISTRATIONS AND MEMBERSHIPS

- Professional Engineer – Connecticut, Massachusetts, New York, and Ohio
- Member – American Society of Civil Engineers
- Water Pollution Control Authority – Former Commission Member – Town of Glastonbury

EMAIL

- MZESSIN@ANCHORENGR.COM

D. SCOTT ATKIN, L.E.P.

Petition 784
Attachment 5

PROFILE

Mr. Atkin is a Licensed Environmental Professional, responsible for a broad range of environmental projects including Phase I and II site assessments, tank removal, remediation designs and oversight, waste management studies, permitting and facility design, compliance monitoring and sampling, and DEP permitting projects. Throughout his career, Mr. Atkin has gained valuable experience in environmental assessment protocols and field implementation of engineering designs.

WORK EXPERIENCE

1993 - Present

Anchor Engineering Services, Inc.

Principal, Vice President

Duties include performing and supervising Phase I and II environmental site assessments, hydrogeologic investigations, UST removals, and voluntary remediation at release site; evaluating site-specific data in light of the Connecticut Remediation Standard Regulations; developing remediation work plans and cost estimates; performing and supervising environmental remedial activities and monitoring events; preparing stormwater pollution prevention (SWPP) and stormwater pollution control (SPC) plans; completing individual and general water discharge permits; evaluating contaminated soils and disposal requests; preparing and implementing site-specific health and safety plans (HASPs); preparing solid waste permit applications; performing facility hazardous waste audits; implementing regulatory permit compliance plans; developing spill prevention control and countermeasures (SPCC) plans; preparing individual air permit (New Source Review) applications for surface coating and landfill gas projects; providing air permit compliance record keeping information; and preparing and implementing Title V permit applications.

1989 - 1993

Fuss & O'Neill, Inc.

Environmental Engineer/Field Scientist

Staff engineer responsible for: environmental site assessments and industrial facility hazardous materials audits, preliminary remediation designs, solid waste facility inspections, contaminated material disposal evaluations, environmental monitoring, training new monitoring personnel, solid waste facility permitting and design, and solid waste management studies.

1988 - 1989

Massachusetts Department of Environmental Protection

Region IV, Intern

Performed hydrogeologic study of a heavily industrialized area of Springfield, MA, developed a regional database of sites, and reviewed environmental site assessments.

REPRESENTATIVE PROJECTS

Banknorth – Preliminary Environmental Site Screens, Phase I and II Site Assessments

Former J & L Steel Site – Phase I/II Site Assessment for CERCLIS site

Former New London Textile Print Company (Waterford Department of Public Works) – Phase I/II Site Assessment for CERCLIS site under DEP Voluntary Remediation Program. Remedial Action Plan Development and Oversight.

East Hartford Landfill – Health and Safety Plan (HASP) Development, Implementation, and On-Site Monitoring; Environmental Sampling; Waste Characterization and Disposal

Shunpike Village Shops II – Phase I Environmental Site Assessment Update, Limited Subsurface Investigation, Remediation Plan Development and Implementation

Town of Windsor – UST Removal Project Management; Stormwater Registrations & SWPP Plans, & Environmental Audits

Town of Hampton – UST Removal, Remediation Design and Oversight

Sand School, Hartford – UST Removal, Materials Management, and HASP Plans: Development, Implementation, On-Site Monitoring, Sample Collection, Temporary Discharge Permitting; Waste Characterization and Disposal

NORCAP Landfill – Zone of Influence Investigation; Monitoring Program Development; Environmental Monitoring; Landfill Gas Flare Permitting

Botticello Vehicle Salvage Yard – Site Investigation, Bio-Remediation Design

Trojan Corporation – Development of RCRA Part B Closure Plan, including Geomembrane Cap

Town of Waterford Landfill – Hydrogeologic Investigation of Zone of Influence

Town of Manchester Landfill –Discharge Permitting; Environmental Monitoring; Operation & Management Plan; Vertical Expansion Permitting; General Special Waste Disposal Authorization Program

American Disposal Services – Air Permit Application and Compliance Record Keeping Assistance

Automated Waste Disposal – Stormwater Permitting and Monitoring; Compliance Inspections; Environmental Investigation; Phase I Site Assessment; Spill Prevention, Control & Countermeasures Plan

75 NUTMEG LANE • GLASTONBURY, CT 06033 • PHONE (860) 633-8770 • FAX (860) 633-5971

TESTIMONY FOR THE PUBLIC RECORD

Mr. Atkin has provided expert witness testimony in the judicial hearings associated with cases relative to the Yaworski Landfill in Canterbury, Connecticut. Testimony covered the areas of geologic/hydrogeologic investigations, facility closure, landfill gas production and management, environmental monitoring, and water quality impacts. He has also provided a deposition relative to environmental assessment, tank removal, and associated contaminated soil removal on a site in Danbury, Connecticut.

Mr. Atkin has testified concerning the environmental impacts of several projects to several Connecticut Planning & Zoning Commissions and Inland Wetland Commission. Typical projects include environmental investigation and remediation projects, groundwater contamination and flow; solid waste volume reduction facilities and transfer stations, sand and gravel operations, and industrial facilities that will store, process, and/or utilize hazardous materials.

EDUCATION

- B.S., Civil Engineering, University of Massachusetts

ADDITIONAL TRAINING AND CONFERENCES

OSHA 1910.120 & 132 Health and Safety (40 Hour) and Supervisor's Training.
Connecticut Certified Landfill and Transfer Station Operator.
New York State Certified Landfill Operator.
USEPA - Design, Operation, and Closure of MSW Landfills, August 1992.
NY DEC Division of Solid Waste – Landfill Operations, January 1995.
Review Course for First [LEP] Licensing Exam, 1997.
The Princeton Course: Groundwater Pollution and Hydrology, March 1999.
Qualitative Hydrogeology: Design of Groundwater Extraction Systems, May 2001
Recycling and Beneficial Uses of Petroleum-Contaminated Soils Processed with the Cold-Mix, Asphalt Emulsion Technology, May 2001.
Expedited Site Assessment, April 2002.
Site Characterization and Remediation Techniques for DNAPLs and Associated Dissolved Phase Contamination, February 2003.
Geographic Information System (GIS) for Environmental Professionals, April 2003.
Practical Methods in Applied Contaminant Geochemistry: From Characterization to Remediation, December 2003.
Vapor Intrusion, December 2004.
DEP Remediation Standard Regulations, April 2005.

MEMBERSHIPS AND REGISTRATIONS

Connecticut Licensed Environmental Professional (LEP) – #311
State of Connecticut Licensed Engineer-in-Training
Member Environmental Professionals' Organization of Connecticut
Member National Groundwater Association
Member Solid Waste Association of North America
Member American Society of Testing & Materials (ESA Sub-Committee)

EMAIL

- SATKIN@ANCHORENGR.COM

Project Management Associates LLC

DAVID S. BROWN, P.E.

PROFILE

Mr. Brown has 30+ years of experience in the evaluation, development and implementation of a wide range of projects, with a special focus on environmental and energy systems, including:

- Project Management, including Budgeting & Schedule Development
- Planning Studies
- Economic & Technical Feasibility Analysis
- Reports, Studies, & Due Diligence Review
- Consulting Engineer's Report For Financing
- Environmental Permitting – Local, State and Federal
- Procurement Documents / Processes – Facilities and Operations
- Owners Representation During Implementation, Startup & Testing
- Staff Direction & Management

PROFESSIONAL EXPERIENCE

2003 - Present **Project Management Associates LLC, West Hartford**

President, Owner

Mr. Brown delivers consulting services to public and private clients in the areas of solid waste management, construction management, energy, and environmental permitting. Recent project activity includes preparation of the CTDEP solid waste permit application for a 37.5 MW (net) wood gasification facility proposed for Plainfield, CT, a feasibility report with economic analysis for a landfill gas-to-electricity project, permit modification application to the CTDEP for a scrap tire volume reduction facility in Eastern Connecticut, landfill & transfer station studies for the Towns of Warren, MA and Hamden and Salisbury CT, management of a school building expansion on Fishers Island, New York, and project development services for WM Recycle America.

2001 - 2003 **TRC Environmental Corporation**

Senior Program Manager

Responsible for management and administration of a significant contract engagement with a waste services client involving numerous professional services and multiple assignments. Projects included services to owner during construction of a $10 Million air handling improvement project at an industrial facility in Hartford, CT. Other projects included evaluation of future options for solid waste management services for two regions of Connecticut encompassing 23 municipalities and provision of consulting services related to permitting and implementation strategies for a large-scale biogassification facility to process over 1,000 tons/day of clean wood fuel.

1998 - 2001 **Connecticut Resources Recovery Authority**

Division Head

For this State-wide public authority, direction of engineering, environmental and operating services and activities. Managed fifteen staff and numerous consultants. Responsibilities included construction and improvement programs for all facilities on a statewide basis, including design, procurement, and management of construction projects. Conduct and management of many special projects, including acquisition of a large contaminated parcel that contains two existing power generation facilities, and implementation of contract arrangements for remediation and clean up of the site. Management of extensive business activities and contract relationships: energy contracts, municipal & private services agreements, and facility operations agreements. Managed and negotiated contract relationships with

vendors that operate large regional systems and perform a variety of services, with annual costs exceeding $50 Million.

1986 - 1998 **Project Management Associates Inc.**

President, Owner

Owner/manager of this solid waste and energy consulting firm. During the course of the twelve years this firm operated, professional services were provided on a wide range of projects throughout Connecticut, and also in the states of Massachusetts, Rhode Island, New York, Wisconsin, Minnesota, North Carolina, and Ohio. Selected accomplishments of the firm and featuring Mr. Brown's personal services include:

- Procurement and negotiation of waste management contracts for a wide range of construction and operating services;
- Performance of due diligence studies;
- Development of business & contract structure for proposed projects;
- Economic analysis of proposed activities, and of alternative decision paths;
- Preparation of technical and economic feasibility reports;
- Client representation before regulatory agencies; and,
- Expert testimony.

1982 - 1986 **Connecticut Resources Recovery Authority**

Director of Operations

Managed operating programs and development activities. Significant contribution to success in five regional waste management projects that were financed through tax-exempt revenue bond issuance of over $750 million, and featuring negotiation of service agreements with sixty-five communities and facility vendors. Administered agency staff, operating service vendors, and numerous legal, engineering and financial advisors.

1979 - 1982 **Connecticut Resources Recovery Authority**

Project Manager

Responsible for feasibility investigations and development activities in four regions of Connecticut. Managed acquisition and subsequent expansion of a large regional facility

1974 - 1979 **Two Consulting Firms**

Project Engineer

Entry level positions in New York and Connecticut. Prepared feasibility studies and reports.

1972 - 1974 **New York State Assembly Central Staff**

Staff Assistant

Lead staff on special program for restructuring state financial support of mental health care systems. Analyzed and researched proposed legislation. Provided general administrative services to Committees.

REPRESENTATIVE PROJECTS

MERIDIAN INC.

CTDEP Permitting services for the scrap tire volume reduction facility.

WILLIMANTIC WASTE PAPER COMPANY, INC.

Eastern Connecticut Regional ONP/OCC Recycling Facility Development
Development of the Southeastern Connecticut MRF
CTDEP Permitting
Bulky Waste Transfer Station Planning & Support Services
Interstate Waste Shipment Planning Services

TOWN OF HAMDEN

Transfer Station Design & Management Study

TOWNS OF SALISBURY/SHARON

Transfer Station Study
Transfer Station Site Search

TOWN OF WINDSOR

Town-wide Collection Study - Town of Windsor
Multi-town Recyclables Collection Bid Documents - Town of Windsor
Economic Evaluation of Landfill Life Extension

CENTRAL MAINE POWER COMPANY

Due Diligence Review – Maine Energy Recovery Company
Power Sales Contract Buydown Feasibility Analysis – Regional Waste Systems

TOWN OF MANCHESTER

Economic Evaluations of Landfill Options

STRATFORD BALING CORPORATION

CTDEP Permitting

KILLINGLY ENERGY LIMITED PARTNERSHIP

Solid Waste CTDEP Facility Permit Application
Availability of Wood Fuel Supply Study
Testimony to CTDEP & Connecticut Siting Council

FISHERS ISLAND NY SCHOOL DISTRICT

Construction Management Services

FISHERS ISLAND CONSERVANCY

Solid Waste Planning Services
Cost/benefit Review - Town Taxes By Island Property Owners

FISHERS ISLAND NY GARBAGE & REFUSE DISTRICT

Comprehensive Recycling Analysis
SWMP Components

TOWN OF GROTON

Solid Waste Collection Study
Residential Bulky Waste Review

MONTGOMERY, SCHOHARIE, OTSEGO SOLID WASTE AUTHORITY (NY)

Waste Export Procurement & System Cost Projections

PORTAGE, WAUPACA, WAUSHARA COUNTIES, WISCONSIN

Waste-to-Energy Project Feasibility Study

SEMASS PROJECT

Project Expansion Negotiations

TOWN OF KILLINGWORTH

Solid Waste Transfer Station Alternatives Study

TOWN OF BARKMAMSTED

Economic Review of Options & Volume Based User Fee Analysis

TOWN OF COVENTRY, CONNECTICUT

Volume Based User Fee Study
Solid Waste Planning Services

USA WASTE

CTDEP Permit Transfer Application – Asbestos Containing Materials Transfer Station

TOWN OF MIDDLEBURY

Hauling Services Procurement

GASTON COUNTY, NORTH CAROLINA

Integrated Waste-to-energy And MRF Facility Negotiations

CROW WING COUNTY, MINNESOTA

MSW Composting Project Procurement

CONNECTICUT RESOURCES RECOVERY AUTHORITY

Review of Waste Wood Generation & Disposal
Review of Future Options & Basis for Negotiations –Wallingford Project (5 Municipalities)
Review of Future Options – the Bridgeport Project (18 Municipalities)
Development of Ash Residue Recycling Agreement
Annual Reconciliation Review -Southeastern WTE Project
Procurement – Sludge/Yard Waste Co-Composting Facility
Technical/Financial Review of Proposed Bulky Waste Processing Plant

Ash Residue Testing Protocol Development
Windsor Landfill Acquisition Analysis & Business Proposals
Expert Testimony

CITY OF SPRINGFIELD, MASSACHUSETTS
Disposal Alternatives Review
Waste Projections

ONONDAGA COUNTY, NY RESOURCE RECOVERY AGENCY
Waste Export Procurement
Annual System Engineer's Review
Electricity Sales Contract Negotiations
C&D Processing Facility Review

ONONDAGA COUNTY, NEW YORK
Sludge Disposal Procurement
Waste-to-Energy Facility Procurement

TOWN OF GROTON ON BEHALF OF THE EASTERN CONNECTICUT REGION
Regional Sludge Management Study-Ownership, Financing, Institutional Issues

BROWN & WOOD LAW FIRM
MSW Composting Facility (Ohio) Feasibility Review

LEE COUNTY FLORIDA (On behalf of NCNB Bank)
Procurement Documents for MSW Composting Project

UNITED WASTE COMPANY
Transfer Station Site Review

CONNECTICUT CARTING CORPORATION
CTDEP Permitting - OCC & Bulky Waste Processing Facilities
CTDEP Permit Transfer Application

(PRIVATE CLIENT)
Commercial Recycling Facility Feasibility Study

CONNECTICUT RIVER ESTUARY REGIONAL PLANNING AGENCY
Regional Recycling Study
Regional Solid Waste Plan

TOWN OF WESTBROOK
Solid Waste Collection Alternatives Study

CITY OF MIDDLETOWN
Resources Recovery Project Review

TOWN OF WINDHAM
Waste-to-Energy Facility Study

CENTRAL CONNECTICUT REGIONAL PLANNING AGENCY
Solid Waste Planning Services

CENTRAL NAUGATUCK VALLEY COG
Solid Waste Interim Transfer Station Planning Services

REGIONAL REFUSE DISPOSAL DISTRICT ONE
Solid Waste Transportation Alternatives Study

TOWN OF OXFORD
Transfer Station & Collection Services RFP

TOWN OF BURLINGTON
Townwide Collection Services Procurement

SOUTH CENTRAL CONNECTICUT REGIONAL RECYCLING AUTHORITY
Intermediate Processing Center Contract Negotiations

TESTIMONY FOR THE PUBLIC RECORD

Mr. Brown has provided testimony for the public record with regard to numerous environmental permit proceedings, including but not limited to:

- Killingly Energy Limited Partnership Wood Power Plant Project

- Connecticut Resources Recovery Authority Permit Applications to Expand Capacity at the North Meadows Hartford Landfill
- CTDEP and CT Siting Council proceedings regarding resources recovery facilities
- On behalf of the Connecticut Resources Recovery Authorty in support of the Wheelabrator Putnam Ash Residue Landfill
- Connecticut Resources Recovery Authority CTDEP permits for expansion of the Shelton Landfill
- Numerous proceedings at local P&Z and Inland Wetland agencies

EDUCATION

- M.S. Urban & Policy Sciences, State University of New York at Stony Brook, 1972
- B.S. Engineering Sciences, State University of New York at Stony Brook, 1970

TRAINING

- CT DEP Certified Operator, Landfills, Transfer Stations and Volume Reduction Facilities # 4110, valid to October 31, 2009

REGISTRATION

- Professional Engineer – Connecticut License #10138, 1976

EMAIL

- Dbrown@consultpma.net

CAREER BACKGROUND

Gary M. Bohan, Jr.
Principal Engineer
PLM

Mr. Bohan holds a BSEE from Northeastern University with a high honors distinction, specializing in power systems engineering. Since his graduation in 1984, he has been involved in the areas of power system planning, design, protection and control. As a Project Engineer, Mr. Bohan has been directly responsible for the following engineering activities:

- Preparation of electric power system planning studies involving power delivery and distribution system facilities.
- Preparation of load flow, short circuit and coordination studies.
- Development of relay settings for transmission systems, generating stations, distribution substations, transportation systems and industrial facilities.
- Review and design of one line diagrams, three line diagrams, control schematics, wiring diagrams, relay/control panel layouts, control room layouts, conduit and cable schedules and material lists.
- Preparation of detailed equipment specifications for power transformers, circuit breakers, circuit switchers, disconnect switches, capacitor banks, metalclad switchgear and other major equipment items.
- Preparation of detailed construction specifications.
- Design of substation automatic transfer schemes.
- Preparation of substation grounding studies.
- Development and implementation of utility revenue metering schemes.
- Providing construction phase engineering services for several project including pre-bid activities, bid evaluations, pre-construction activities, shop drawing review and on-site construction monitoring.
- Evaluation of risk assessment and regulation compliance associated with several PCB retrofit and retrofit projects.
- Preparation of load power factor correction (capacitor bank) studies.

Mr. Bohan is a registered Professional Engineer in the Commonwealth of Massachusetts (35428).

CAREER BACKGROUND

Allan M. Rice
Principal Engineer
PLM

Mr. Rice holds a BSEE from Northeastern University specializing in electric power engineering. Upon graduation, he obtained a position with a large privately owned New England based utility where he worked for eleven years and advanced to the position of Distribution Planning Engineer. This position required a thorough understanding of power system capabilities; equipment thermal rating procedures; and the ability to develop, design and compare viable system expansion alternatives, including the economic analysis necessary to determine the least cost plan for the utility.

Mr. Rice has been with PLM for ten years. In his present capacity as a Principal Engineer, he has been called upon to utilize his detailed knowledge of power system design and operating criteria on a variety of assignments and continues to be a primary member of PLM's system planning and underground cable engineering groups.

At PLM, Mr. Rice's job responsibilities have included substation, transmission and distribution system project management, design and equipment specifications, voltage conversion, protective relaying and coordination, system power factor correction and efficiency studies, and system planning studies. He has designed several underground transmission lines operating at 115 kV, as well as numerous overhead and underground distribution projects at system operating voltages through 34.5 kV. Emphasis is placed on service reliability and proper economic evaluation of alternatives in order to allow our clients to provide the highest possible quality of service at the most reasonable cost.

Mr. Rice's most recent consulting experience includes system planning studies for two Ivy League colleges, six VPPSA member systems (Vermont) and several Massachusetts Municipal utility systems. He has served as PLM project manager for two recent high profile substation design projects. For the first, he provided detailed engineering design for a new two-mile, double circuit 115 kV underground transmission line and 115/13.8 kV substation with indoor 115 kV GIS switchgear. This project included permitting before the Massachusetts Energy Facilities Siting Board, is presently under construction and will be on line by the end of the year. For the second, he prepared testimony for the Vermont Public Service Board leading to the successful permitting of a substation voltage upgrade and capacity increase for a Vermont municipal system. PLM designed the new facilities and the substation and distribution feeder construction is now one hundred percent complete.

While at PLM, Mr. Rice has also has designed and permitted an underground crossing of an interstate highway by guided directional drilling methods, a ten-mile long double circuit 23 kV underground transmission line that passed through the center of a historic downtown district and numerous overhead and underground 13 kV distribution system projects.

Mr. Rice is a Registered Professional Engineer in Massachusetts (33374) and Vermont.

Allan Smardin, President
HMB Acoustics

I have been a principal consultant for the firm since 1962. HMB has been providing noise measurment services to the general public, and industry since 1959. HMB has performed numerous environmental impact studies for power generation plants such as Consolidated Edison of New York; The Southern Conn. Gas Company; and Northeast Utilities. I have also directed and managed feasibility noise control studies related to OSHA noise level criteria. Another study had to do with a long term noise monitoring project at JFK Airport which included the effect of noise on the surrounding communities.

I have worked on programs which included the measurement and assessment of small to large caliber weapon environmental impacts for both the Remington and Winchester Arms Companies. Other projects include Aberdeen Proving Ground, and Picatinny Arsenal environmental impact studies. Many noise studies were performed at quarries, mining operations, and recycling facilities. Other projects include the aerospace industry and the field of architectural acoustics.

I have attended the University of Conn., and have been acknowledged in a text book on industrial noise control. I have participated in several seminars at local Conn. colleges and universities on industrial noise control. I have authored papers on this subject, and have also been a guest speaker at the Hartford, Danbury, and Bridgeport Engineering Societies.

Kleinschmidt
Energy & Water Resource Consultants

PROFESSIONAL RESUME

Christine A. Tomichek

Senior Fisheries Biologist

Christine Tomichek joined Kleinschmidt as a Senior Fisheries Biologist in 2003. She graduated from the University of Massachusetts Amherst, MA with a B.S. degree in Fisheries Biology.

At Kleinschmidt, Ms. Tomichek is responsible for assisting clients in planning and implementing of aquatic organism studies including fisheries and macroinvertebrate assessments. She assists in planning and implementing studies for NPDES 316(b) and hydro licensing compliance working closely with our engineering staff in identifying the need for engineering solutions, their location and their design. Ms. Tomichek is involved in consultation with both state and federal resource agencies in support of clients. Prior to joining Kleinschmidt, Ms. Tomichek worked for over 2 decades at Millstone Nuclear Power Facility assessing, reporting and mitigating fisheries related power plant impacts. Her responsibilities ranged from primary data collection, using various data collection techniques, to assisting in study and survey designs, supervision of study teams, to analysis and reporting. Ms. Tomichek has extensive expertise in endangered species assessment and currently holds a Endangered Species research permit for shortnose sturgeon. She currently serves as the President of the Southern New England Chapter of the American Fisheries Society.

The following is a representative list of her project experience and responsibilities at Kleinschmidt.

PROJECT/CLIENT	DATE	RESPONSIBILITIES
Holyoke Gas and Electric Holyoke Hydroelectric Project	2003-Present	Project Manager for environmental studies related to the relicensing of the Holyoke Hydroelectric Project. Studies include fisheries, freshwater mussels, upstream and downstream passage, endangered species, and flow evaluations.
NRG Energy, Inc. Montville and Norwalk Harbor Stations	2003-Present	Project manager for NPDES 316(b) impingement and entrainment studies at power plants located on the Thames River and Long Island Sound. Also for the preparation of the Proposal for Information Collection (PIC) and the Comprehensive Demonstration Study (CDS) for NPDES 316(b) compliance.
Connecticut Light & Power Long Island Sound Cable Leak Monitoring	2003-Present	Oversee and coordinate benthic sampling efforts for leaks in the cross-sound cable
Holyoke Water Power Company Mount Tom Generating Station	2004-Present	Project manager and lead scientist for the preparation of the PIC and the CDS for NPDES 316(b) compliance.
Florida Power and Light W.F. Wyman Generating Station	2004-Present	Project manager for the preparation of a strategic assessment of 316(b) compliance options and the PIC for NPDES 316(b) compliance.
Consolidated Edison Energy of Massachusetts West Springfield Station	2004-Present	Project manager for various studies required for NPDES permit renewal including impingement and entrainment studies, benthic macroinvertebrates study, and thermal plume mapping
Electric Power Research Institute (EPRI) Louver Bypass Guidance Study	2004-Present	Project manager for research on field verification of guidance of American eels and endangered shortnose sturgeon along an angled louver systems.
NRG Energy, Inc. Devon Generating Station	2005	Project manager and lead biologist for preparation of the PIC for NPDES 316(b) compliance.

AES Thames, LLC. AES Thames Cogeneration Station	2005-Present	Project manager for 316(b) compliance projects, including preparation of the PIC, design and conduct an impingement study, and preparation of the CDS) for NPDES 316(b) compliance
Duke Energy. Bridgeport Energy, LLC	2005-Present	Project manager for 316(b) compliance projects, including preparation of the PIC,and preparation of the CDS) for NPDES 316(b) compliance
CT. Depart. of Environmental Protection Niantic River Watershed Plan	2005-Present	Project manager for Niantic River Watershed Plan Development.
Plainfield Renewable Energy, LLC Aquatic Ecology Assessment Canterbury, CT	2006-Present	Project manager for assessment of a new cooling water intake structure.

Prior to joining Kleinschmidt, Ms. Tomichek's experience included the following:

Dominion/Millstone Environmental Lab *2001-2003*
Waterford, Connecticut
Biologist III

- Environmental lead for Fish Ecology studies at Millstone Nuclear Power Station.
- Responsible for assessing, reporting and mitigating fisheries related power plant impacts.
- Responsible for development and study design of fish return systems at Millstone I, II and III and monitoring adult fish populations in the Millstone area.
- Studies include laboratory, field sampling, impact assessment and reporting of ichthyoplankton eggs, larvae, lobster larvae, benthic infauna, trawl, seines, rocky intertidal studies,
- Estimate entrainment, impingement and fish eggs, larvae and adult survival studies.
- Skills include knowledge and use of SAS (Statistical Analysis System),
- Identification of fish eggs, larvae, juveniles and adults.

Northeast Utilities Service Company/Environmental Laboratory *1979-2001*
Waterford, Connecticut
Senior Scientist – *In addition to the same responsibilities as above.*

- Holyoke Dam relicensing environmental lead, negotiated scoped and executed all environmental studies required for the relicensing,
- Environmental Lead for CY and Millstone 1 Decommissioning Environmental Reports,
- Designated Company endangered species biologist,
- Developed and negotiated Thames River fish passage plan for Tunnel and Taftville Dams,
- Author of Fish Ecology Annual Report (1982-Present),
- Lead biologist on Millstone Unit 3 traveling screen and fish return system replacement project,
- Lead biologist on Millstone Fish Barrier (horizontal bar rack) replacement project.
- Principal Investigator, Electric Power Research Institute. (EPRI) Evaluation of Angled Bar Racks and Louvers for Guiding Fish at Water Intakes. EPRI Technical Report 1005193.
- Also held positions of scientist, associate scientist and technician.

Connecticut Department of Environmental Protection *1978-1979*
Waterford, Connecticut
Fisheries Biologist- Anadromous fish restoration program in the Connecticut and Thames Rivers, collecting, counting and population estimates for American shad and Atlantic salmon. Developed marine recreation fish survey along the entire Connecticut coast.
US Fish & Wildlife Service *(Massachusetts Cooperative Fisheries Research Unit) 1976-1978*
Amherst, Massachusetts
Environmental Technician-Counting, collection and tracking of anadromous fish in the Connecticut and Farmington Rivers.

Publications

Tomichek, C.A. and T. Sisk. 2006. Evaluation of an angled louver facility for guiding sturgeon to a downstream bypass, EPRI, Palo Alto, CA. Holyoke Gas & Electric,Compnay, Holyoke, MA and WE-Energies, Inc., Milwaukee, WI. EPRI document 1011786.

Roseman, E.F, C. A. Tomichek, T. L. Maynard, and J. A. Burton. 2005. Relative abundance, age, growth, and fecundity of grubby Myoxocephalus aenaeus in Niantic River and Niantic Bay, Long Island Sound. Journal of Sea Research Volume 53, Issue 4, Pages 309-318

Leggett, W.C., T.F. Savoy and C.A. Tomichek. 2004. The Impact of Enhancement Initiatives on the Structure and Dynamics of the Connecticut River Population of American Shad. Pages 391-406 in P.M. Jacobson, D.A. Dixon, W.C. Leggett, B. C. Marcy, Jr. and R.R. Massengill, editors. The Connecticut River Ecological Study (1965-1973) revisited: ecology of the lower Connecticut River 1973-2003. American Fisheries Society, Monograph 9, Bethesda, Maryland.

Jacobson, P.M., Tomichek, C.A. and Danila, D.J. (2004). Estimates of Impingement of Fish on the Connecticut Yankee Intake Structure Screens and a Summary of Fish Deterrent Devices Tested and Implemented in P.M. Jacobson, D.A. Dixon, W.C. Leggett, B. C. Marcy, Jr. and R.R. Massengill, editors. The Connecticut River Ecological Study (1965-1973) revisited: ecology of the lower Connecticut River 1973-2003. American Fisheries Society, Monograph 9, Bethesda, Maryland.

Tomichek, C.A. and E. F. Roseman. (2004). Changes in Fish and Macroinvertebrate Assemblages of the Niantic River Estuary, Connecticut, 1976-2000. Proc.of American Fisheries Society Estuarine Symposium Baltimore, Maryland. August 19-22, 2002. American Fisheries Society, , Bethesda, MD.

Tomichek, C.A. and E. F. Roseman. (2004). Trends in Abundance of Eggs, Larvae, Juvenile and Adult Fish Collected From 1976 Through 2001 in Eastern Long Island Sound. Proc. of the 2002 Long Island Sound Conference. Groton, CT.

Jacobson, P.M., E. Lorda, D.J. Danila, J.D. Miller, C.A. Tomichek, and R.A. Sher. 1998. Studies of cooling water intake effects at two large coastal nuclear power stations in New England. Proc. EPRI Technical Workshop of Clean Water Act Section 316 (b) Issues, September 23-24, 1998. Berkeley Springs, WV.

Tomichek, C.A. 1996. Improved efficiency of the Millstone Unit 3 fish return. Proc. 52nd Northeast Fish and Wildlife Conf. Farmington, CT. March 31-April 3.

Gauthier (Tomichek), C., and J.M. Vozarik. 1993. The influence of eelgrass (Zostera marina) standing stock on Atlantic silverside abundance in Jordan Cove, Waterford, CT. Proc. American Fisheries Society Meeting, Univ. of Conn., Storrs, CT. June 1993.

Gauthier (Tomichek), C.P. and L.E. Bireley. 1986. Coexistance of two sympatric species of silversides, Menidia mendia and Menidia beryllina, along the Connecticut Coast. Proc. American Fisheries Society Annual Meeting, Univ. of Rhode Island, Narragansett. June 23-26, 1986.

Bireley, L.E., and C.P. Gauthier (Tomichek). 1986. A sixteen year record of fluctuations in abundance of Menidia mendia and Menidia beryllina (Osteichthyes:Atherinidae) in coastal Long Island Sound. Proc. American Fisheries Society Annual Meeting, Univ. of Rhode Island, Narragansett. June 23-26, 1986.

Gauthier (Tomichek), C. 1985. Studies of outmigrating adult American shad by-passed in the Holyoke Dam canal system (1980-1984). Proc. 41st Northeast Fish and Wildlife Conference, Hartford, CT. May 5-8, 1985.

Kleinschmidt
Energy & Water Resource Consultants

PROFESSIONAL RESUME

Jeffrey J. Park

Ecologist

Jeffrey J. Park is an Ecologist with Kleinschmidt Associates. He received an M.A. in Biology from Harvard University (1998) (*Thesis*: *The Effects of Gap-Phase Heterogeneity on Stand Dynamics within a Chamaecyparis thyoides Forest*) and a B.A. in Anthropology from the University of Maine (Orono) (1993) Mr. Park has 8 years of experience.

Mr. Park joined Kleinschmidt Associates in early 2006. Prior to joining Kleinschmidt, Mr. Park was an Ecologist/Biostatistician for TRC Environmental Corporation, where he worked for seven years. During that seven-year period, Mr. Park designed and conducted numerous aquatic and terrestrial ecological studies within the northeast and Mid-Atlantic States. Studies quantitatively assessed spatial and temporal patterns in abundance, distribution, and species composition within plant, fish, amphibian, benthic macroinvertebrate, phytoplankton/zooplankton, and macroalgal communities. Biota was evaluated with respect to biotic properties, e.g., competitive interactions, and abiotic properties, e.g., soil/water physico-chemical attributes, substrate types, and light intensity. Aquatic resource analyses have also included quantifying CWIS entrainment/impingement (E/I) impacts, providing an analysis of thermal plume impacts, assessing population, community, and ecosystem-level effects associated with heated cooling water discharges and E/I, and discussing species-specific biology. This work was conducted in association with Hydro re-licensing projects, National Pollutant Discharge Elimination System (NPDES) permits, and State Pollutant Discharge Elimination System (SPDES) permits, e.g., the Bowline Facility (Hudson River). Impact analyses have also included the identification of sensitive aquatic resources and critical aquatic habitats.

In addition to applying fundamental ecological principles, Mr. Park has extensive experience with various univariate/multivariate biostatistical analyses, experimental design, and hypothesis testing. Standard quantitative ecological analyses have included, amongst others, rarefaction analysis, similarity/dissimilarity indices, diversity indices, and spatial pattern/coefficients of dispersion. With respect to statistical analyses, Mr. Park has used data transformations and a suite of goodness-of-fit tests, along with quantile:quantile plots, frequency distribution histograms, and basic descriptive statistics. Nonparametric and parametric univariate statistics have included the Mann-Whitney *U*-test, two-sample Kolmogorov-Smirnov *D*-test, simple linear regression, Mann-Kendall test for trend, and one-way ANOVA. Multivariate methods have included Detrended Correspondence Analysis (DCA), Two-way Indicator Species Analysis (TWINSPAN), Principle Factors Analysis (PFA), and agglomerative/hierarchical Cluster Analysis. Mr. Park has also modeled fish (closed systems) and benthic macroinvertebrate populations. Quantitative analyses have included simple linear regression, one way ANOVA, equivalent adult loss calculations, and manipulating Conditional Entrainment Mortality Rate (CEMR) based modeling results. Population size estimates have utilized maximum weighted likelihood estimates, mark/recapture studies, and software programs including MARK/CAPTURE.

The following summaries present a sampling of the experience types that Mr. Park has generated over the past seven years. Experience types discussed include ecological studies; ecological risk assessment; aquatic resource analyses; biostatistics; ACOE wetland functions & values assessments; wetland design and construction; and rare, threatened, and endangered species/habitat assessments.

PROJECT/CLIENT	YEAR	RESPONSIBILITY
Avon Water Company USEPA Rapid Bioassessment of Fish Habitat Chidsey Brook Avon, CT	2006-ongoing	Mr. Park was responsible for conducting a semi-quantitative fisheries habitat assessment of a low gradient stream using the USEPA Rapid Bioassessment Protocol methodology. The objective of the study was to provide a baseline with which to gage the effects of well drawdown on fishes and fish habitat. A secondary objective was to identify other impact types, e.g. development, that may be contributing to habitat impacts. Data analyses included hierarchical and agglomerative cluster analysis and applying a lower 25^{th} quartile to the reference site in order to demarcate "good" quality sites from "poor" quality sites. Mr. Park was responsible for all reporting and client interaction.
Dr. Douglas Dixon Electric Power Research Institute (EPRI) Evaluation of Shortnose Sturgeon Distribution along a 15° louver Holyoke, MA	2006-ongoing	During May and June of 2005 a field study was conducted in the power canal near Holyoke Dam (Holyoke, MA) that evaluated the guidance efficiency, behavior, and movement of 30 hatchery-raised shortnose sturgeon. The sturgeon guidance study only made qualitative assertions regarding the differences in residence time for shortnose sturgeon across different depths and locations. As part of Dr. Dixon's effort to publish the results of the study in the peer reviewed journal Transactions of the American Fisheries Society (AFS), Mr. Park conducted a statistical analysis of the sturgeon distribution data. Specific analyses included a one-way ANOVA, along with a post hoc Tukey-Scheffe test, Levene's test for homogeneity, and descriptive statistics. SAS (Version 8) was used for all analyses. Mr. Park presented the results of all of the analyses in a report that was incorporated into the manuscript submitted to the joumal.
Plainfield Renewable Energy, LLC New Cooling Water Intake Aquatic Ecology Assessment Canterbury, CT	ongoing	Project Manager for a study that characterized fish communities within the Quinebaug River. Mr. Park collected the fish data through a combination of electrofishing and hoopnet sampling, conducted all data analyses, and wrote the environmental impact assessment. The impact assessment discussed impacts to larval and adult fishes with respect to suspended solids, waste stream physico-chemical properties, entrainment, and impingement. Mr. Park also assessed baseline fish health by assessing the effects of parasites on juvenile redbreast sunfish, calculating a fish condition factor, and constructing linear length:weight regression plots for juvenile fishes
Niantic River Restoration Plan Niantic River Ecology Niantic, CT	ongoing	Using data sets collected by the University of Connecticut and the Millstone Environmental Laboratory, Mr. Park developed an aquatic ecology assessment for the Niantic River estuary that quantitatively assessed the effects of nutrient loading, light attenuation K_d, and chlorophyll a densities on macroalgal and eelgrass biomass, in addition to macroalgal community composition. Mr. Park also examined the effects of changes in eelgrass biomass on benthic macroinvertebrates, and fishes. Data analyses included a non-parametric Mann-Kendall test for trend, a t-test for independent samples, and the Shannon-Weiner Diversity Index (including evenness).

Long-term Forested Wetland Vegetation Monitoring FAA Atlantic City, NJ	ongoing	Lead ecologist presently conducting a long-term study designed to monitor and assess the effects of changes in groundwater elevation on the vertical distribution of forested wetland seedlings. The target species included in the analysis will include Chamaecyparis thyoides (Atlantic white cedar), Acer rubrum (red maple), and Clethra alnifolia (sweet pepperbush). By establishing baseline conditions, drawdown effects will be distinguished from natural variation using statistically based analyses.
Benthic Macroinvertebrate Population Modeling and Measures of Effect Study FAA Atlantic City, NJ	2006	Aquatic macroinvertebrates were collected in contaminated and uncontaminated portions of the mercury-impacted South branch of Absecon Creek. Population estimates were calculated using a maximum weighted likelihood (MLE) estimate developed by Carle and Strub (1978), which is a multiple pass depletion method. Statistical analyses included Cluster Analysis and a Kruskal-Wallis ANOVA. Mr. Park conducted the data analysis for one of the co-authors of the MLE Method (Dr. Frank Carle of Rutgers University).
Stream Bioassessment using Benthic Macroinvertebrates FAA Atlantic City, NJ	2006	Assessed the Index of Biotic Integrity (IBI) within a stream community using benthic macroinvertebrates collected from riffle and pool habitats. Variables examined included % Ephemeroptera, % Plecoptera, % Trichoptera, % Dicronota, % Trichoptera, in addition to functional feeding group, the Coastal Plain Macroinvertebrate Index (CPMI), species richness (R), Shannon-Weiner diversity (H), evenness (J), and a MLE generated population size. Abiotic properties examined included total/filtered surface water Hg, DO, temperature, total dissolved solids, conductivity, pH, and flow volume/velocity/depth. Cluster Analysis was used to segregate sites on the basis of H, J, R, and the MLE estimate. A Spearman Rank Order correlation analysis was used to associate community metrics with abiotic properties.
Avian Foraging/Avian Migrant Study Kibby Windpower Project ME	2006	Using existing avian community data, Mr. Park calculated a Morisita coefficient of similarity, the Shannon-Weiner diversity coefficient (H), and an index of community equitability (J). Statistically significant differences in the H index for species were assessed with a Mann-Whitney U-test. Variability in avian data was linked with temperature. Using existing avian community data, Mr. Park calculated a species-specific coefficient of estimated turbine exposure, and conducted a statistical evaluation of avian flight vectors. Mr. Park also provided critical review of an avian radar study conducted by Woodlot Alternatives, Inc.
Geostatistical Modeling of Hg Distribution in Reservoir Sediments FAA Atlantic City, NJ	2005	Mr. Park provided statistical support for an analysis of the spatial distribution of Hg contaminated sediments present in the FAA wetland/open water complex. The complex was partitioned into hydraulic units including the South and North Branches of Absecon Creek, in addition to the Upper and Lower reservoirs. The analysis included the assessment of the distribution of the data, in addition to modeling of Hg distribution using an empirical semivariogram and kriging. The effort resulted in surface maps identifying Hg concentration contours by hydraulic unit which facilitated a calculation of the total estimated volume of Hg in the FAA wetlands/reservoirs.

Breeding Anuran Measures of Effect Study FAA Atlantic City, NJ	2005	Mr. Park was responsible for designing and writing the results up for a study that examined the effects of Hg contamination and habitat parameters on breeding anuran populations. Habitat properties were sampled within a total of 14 breeding sites and included: conductivity, dissolved oxygen, pH, oxidation/reduction potential, total dissolved solids, total suspended solids, temperature, conductivity; aluminum (Al), total mercury (Hg), understory light intensity, and estimated percent cover of substrate types. Principal Factor Analysis (PFA) was used to reduce the large set of habitat variables to a smaller set of underlying variables, which would account for the common variance in the total data set. Habitat variables, auditory call scores, and breeding anuran numbers were associated with PFA axis scores with a Spearman Rank correlation coefficient. The results of the study indicate that light levels, water temperature, and pH are more proximate to the distribution of anurans than surface water Hg concentrations.
Peatland Restoration Lockheed-Martin/Former GE Site North Reading, MA	2005	Mr. Park was responsible for designing a shrub-dominated bog restoration of a metals-contaminated portion of a wetland that was dominated by the invasives Phragmites australis and Lythrum salicaria. Once the invasives were removed, and the contaminated soils excavated, Mr. Park specified the wetland soil type, plant species list, and designed the wetland restoration hummock-hollow micro-topography. Mr. Park was responsible for quantitative post-construction monitoring, data analysis, and reporting.
Fish Population Measures of Effect Study FAA Atlantic City, NJ	2005	Mr. Park helped design and execute a fish mark/recapture study that utilized line sampling and hoop nets. All fishes caught were tagged (dorsally), identified to species, weighed, and measured (TL mm). Mr. Park was also responsible for using simple linear regression of log transformed length-weight data in order to identify possible Hg related effects on growth. In addition, Mr. Park calculated fish condition factors. Differences in fish growth between the contaminated and reference sites were assessed with a Kolmogorov- Smirnov D-test. Population estimates were conducted with the software program MARK/RECAPTURE. Mr. Park was responsible for summarizing all results in a technical report that was included in the Supplemental Ecological Risk Assessment.
Dendrochemical Dating Study FAA Atlantic City, NJ	2005	Mr. Park developed and conducted a study designed to identify the timing of the deposition of elemental Hg (mercury) within the forested wetlands associated with the South Branch of the Absecon Creek (SBAC). Specifically, Mr. Park used increment cores extracted from Chamaecyparis thyoides (Atlantic white cedar), and Hg concentrations contained within five-year increments to determine the date of Hg deposition. A Mann-Kendall test was used to examine trends with time, while box plots and a Mann-Whitney U- test was used to assess spatial trends. This investigation was used as an ancillary study to sediment dating analyses conducted by Rensellaer Polytechnic Institute (RPI) with critical review being provided by the Massachusetts Institute of Technology (MIT). All analyses of Hg in wood tissue followed USEPA approved protocols and were conducted by a USEPA approved laboratory. The results of the dendrochemical study closely matched the results of the sediment dating study and effectively pinpointed a timeframe for the initial input of Hg into the SBAC forested wetlands.

Tree Swallow Measures of Effect Study FAA Atlantic City, NJ	2005	Mr. Park was responsible for conducting all data analysis on tree swallow nestling growth and egg tissue Hg concentrations. Data analysis included generating predicted nestling weights, comparing median nestling weights with a Mann-Whitney U-test, and assessing the effects of hatch date, location, and egg tissue Hg levels with Principal Factors Analysis (PFA). Mr. Park was responsible for all data analysis and summarized the findings in a brief technical report that was included in the Supplemental Ecological Risk Assessment.
Saxifraga pennsylvanica survey Proposed Subdivision Kennebunkport, ME	2005	Mr. Park's responsibilities included the design and execution of a field survey for the state listed (threatened) swamp saxifrage (Saxifraga pennsylvanica). Sampling included establishing randomly placed 5 meter radial plots; identifying all plant species within the plots; estimating percent canopy cover and measuring understory light levels. All data were presented in a technical memorandum. Mr. Park presented the plant survey results at a public hearing before the Kennebunkport Planning Board and discussed impacts to the swamp saxifrage, which was identified on the site.
Terrestrial Ecology Analysis North Bellport Energy Facility EA Long Island, NY	2005	Mr. Park was responsible for the characterization of natural resources on a 90-acre parcel in Long Island, NY. Natural resource characterization included a quantitative study of terrestrial forest communities, identification of forest successional trends, a wildlife survey, and a rare species survey (tiger salamander). An impact assessment was also conducted. Mr. Park summarized the findings in the Terrestrial Ecology section of an EA under New York State's SEQRA process.
Reservoir Plankton Mercury Study FAA Atlantic City, NJ	2005	In order to more accurately identify mercury transfer with the aquatic food web present in the Atlantic City Reservoirs (Upper and Lower), plankton were collected with a tow-net for quantitative analysis and analyzed for both mercury and methylmercury. Mr. Park developed the quantitative approach used to compare impacted plankton populations with non-impacted populations. Preliminary data analyses included correlation, and a test for the mean.
MCP Stage I Ecological Risk Characterization Brownfield Site Gardner, MA	2005	Mr. Park conducted a Stage I Ecological Risk Characterization (ERC) in accordance Massachusetts Contingency Plan (MCP) rules and regulations at a Brownfields site located in Gardner, Massachusetts. Mr. Park characterized all habitat types, identified ecological receptors, and identified complete exposure pathways with existing soil and sediment PAH data. The results of the Stage I ERC indicated that PAH concentrations were elevated throughout the brook located on the site, in addition to associated tributaries. A "Local Conditions" argument was used to suggest that the association between site contamination and brook contamination was confounded by outside sources of PAHs. It was concluded that a Stage II ERC was not warranted and that the removal of the brook sediments would do little to remedy the PAH problem, given that PAH input may be ongoing.

Wetland Restoration Woodbury Development Associates, Woodbury, NY	2001-2005	Mr. Park was responsible for the oversight of a 4.7-acre wetland restoration, post-construction monitoring, and reporting to the ACOE District Engineer. Data analysis reflected an interaction between TRC and the ACOE District Office. The agreed upon analysis included absolute and relative dominance, absolute and relative frequency, and finally absolute and relative percent cover. Assessment of tree survival was assessed in the field. Mr. Park conducted all analyses and submitted the final monitoring report in 2005.
Screening Level Ecological Risk Assessment (SLERA) GE Silicones Facility-Hazardous Waste Incinerators Waterford, NY	2004	Mr. Park was responsible for identifying ecological receptors and characterizing the ecological setting. All work was conducted in accordance with Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities (EPA, August 1999). Mr. Park also provided guidance to the lead risk assessor with respect to assessment endpoints and ingestion rates. Ingestion rate data were obtained from the Wildlife Exposure Factors Handbook (USEPA, 1993).
Wetland Restoration KC Realty Trust Siting Plan Newburyport, MA	2000-2004	Designed a 2.6-acre wetland restoration at a previously filled site. The design included preparing a plan that specified excavation depths, volume of material to be removed, a planting plan, and a post-construction monitoring protocol. Data analyses included simple percent cover and an examination of species richness with time. The restoration plan was submitted to the MA DEP Northeast regional office and the Newburyport Conservation Commission. Both agencies approved the plan. Mr. Park submitted the Final Monitoring Report to the ACOE in 2004 and received a certificate of compliance from the Newburyport Conservation Commission.
Benthic Macroinvertebrate Community Characterization Idaho Power Company Snake River Facility Hydro Re-licensing Project Idaho	2003	Mr. Park conducted an analysis of benthic invertebrate data collected over a seven-year period within the Snake River. Data analyses included rarefaction curves, Shannon-Weiner diversity indices (H), Sorenson's index of similarity (C_N), Renkonen Similarity index, and a Hilsenhoff biotic index. Statistical analyses included Multivariate hierarchical and agglomerative Cluster Analysis; non-parametric Kruskal-Wallis ANOVA; a two sample Kolmogorov-Smirnov D-test; and using 95% confidence intervals around the actual mean to determine a required sample size to characterize under-sampled portions of the river. Mr. Park was responsible for interpreting results and presenting the discussion in reports that were incorporated into the overall report for each year.

Statistical Analysis of Toxicity Data FAA Atlantic City, NJ	2003	Mr. Park collected toxicity data and statistically assessed significant differences in mean toxicity values with a one-way Analysis of Variance (ANOVA). The raw toxicity data used in the ANOVA included the eight laboratory runs of (1) Hyallela azteca survival fraction; (2) Hyallela azteca length; (3) Hyallela azteca weight; and (4) Chironomus tentans survival fraction. Prior to the ANOVA analysis, all raw survival fraction data were subjected to a Shapiro-Wilk W-test for normality. Following the W-test, all non-normally distributed survival fraction data were arcsine ((square root (x)) transformed to achieve normality. Following the ANOVA analysis, a post-hoc pairwise comparison of site means was conducted with a Tukey HSD (honestly significantly different) test, which is based upon the studentized range distribution. Mr. Park also conducted an analysis of Rapid Bioassessment Protocol (RBP) data using a Pearson product-moment correlation coefficient with corresponding 0.05α probability levels.
Statistical Analysis of RBP Data Ecological Risk Assessment, BNSF Site	2003	Mr. Park was responsible for conducting a non-parametric correlation analysis of RBP scores, benthic invertebrate community indices, and various surface water and sediment chemical properties. All data were first subjected to a Shapiro-Wilk W-test for normality. The non-normally distributed data were then analyzed with a Spearman Rank Order correlation coefficient matrix. Mr. Park summarized all findings in a technical report that was incorporated into the Risk Assessment.
Assessment of Benthic Macroinvertebrate Assemblages Ecological Risk Assessment Montello Site	2003	The non-parametric Wilcoxon Matched Pairs test was used to explore the possibility of significant differences in benthic macroinvertebrate community metrics between Rapid Bioassessment Protocol (RBP) Site Pairs. A necessary additional step in the analysis of the benthic community was to investigate exactly how species composition changed between sites. This was achieved with the use of the Morisita Index of Similarity (MS_{ij}). Mr. Park summarized all findings in a technical report that was incorporated into the Risk Assessment.
Carex bullata Survey Islander East Proposed Gas Pipeline Long Island, NY	2003	In response to NYSDEC concerns over impacts to four plant species within a proposed gas pipeline right-of-way (ROW), Mr. Park developed and executed a quantitative rare plant survey. The sample methodology employed was submitted to the NYSDEC before any work was conducted. During the course of the survey, a small population of the state-listed plant Carex bullata (button sedge) was identified. The plant population was identified, a quantitative assessment of population e.g. densities was conducted, and the plant population was surveyed. All findings were presented in a report that was submitted to the NYSDEC.

Disturbance-mediated Forested Wetland Dynamics FAA Atlantic City, NJ	2003	Mr. Park designed and conducted a study as part of the FAA Ecological Risk Assessment eco-values studies that identified differences in contaminated versus uncontaminated stand composition and structure, Acer rubrum (red maple) and Chamaecyparis thyoides (Atlantic white cedar) growth rates, and understory species richness. The study also characterized the effects of allogenic processes including hurricanes, the channelization of the SBAC, and mechanical timber removal on vegetation dynamics. The study employed historic aerial photographs (1932-1974), age-structure analysis, tree-ring chronologies, stand structure analysis, understory photosynthetic photon flux density (PPFD) intensity, and understory vegetation characterization. Data analyses included Kolmogorov-Smirnov test; Kruskal-Wallis ANOVA; Principal Factors Analysis; G-test for spatial pattern, Coefficient of Dispersion, and the Fisher Exact Probability test.
Pilot Mitigation Program: Shrubland Restoration FAA Atlantic City, NJ	2003	Mr. Park designed and conducted a shrubland study that recorded data on dominant herbs, tree and shrub seedlings, depth of the A/A_p horizon and underlying strata, and A-layer physical and chemical properties. In addition, soil data were collected at the bases of Andropogon scoparius, Lyonia mariana, and Baptisia tinctorum. These plants have been documented to be important to the life cycles of various endangered moth and butterfly species. The baseline study will assess what factors comprise the driving mechanisms behind the reference butterfly plant community and the individual plant species. The results of the baseline study will be used to generate a barren area restoration plan, the construction of which will be overseen by Mr. Park. Mr. Park is presently writing the report and will also be responsible for post-construction monitoring and reporting. Data analyses included 95% confidence intervals, Kolmogorov-Smirnov one sample D-test and the Mann-Whitney U-test.
Terrestrial Ecology Indian Point Peaking Facility Article X Buchanan, NY	2002	Mr. Park was responsible for the characterization of natural resources on a 102-acre parcel in Buchanan, NY. Natural resource characterization included a quantitative study of terrestrial forest communities, a delineation of wetlands, and a wildlife assessment. An impact assessment was also conducted. Mr. Park summarized the findings in the Terrestrial Ecology section in accordance with Article X of the New York State Public Service Law.
Islander East Proposed Gas Pipeline Helianthum propinquum and Floerkea prosepinacoides Surveys Various Sites, CT.	2002	The Connecticut Department of Environmental Protection (CTDEP) identified four areas intersected by the proposed pipeline alignment potentially containing seven rare plant species. It was determined that three of the four areas would not be affected by the proposed project and that of the seven plant species both Helianthum propinquum (frostweed) (endangered) and Floerkea prosepinacoides (false mermaid-weed) (endangered) exhibited the potential to occur in the pipeline ROW. All upland and wetland habitats were initially screened with a meander survey. Walk-through survey methods involved two paired individuals walking in a zig-zag fashion so as to cover the entire extent of the right-of-way, while simultaneously noting immediately adjacent habitat. The survey indicated that while a rich floral assemblage occurred in the ROW, the two plant species of interest did not. The CTDEP concurred with the findings of the survey.

Forest Mitigation Bank Study FAA Atlantic City, NJ	2002	Mr. Park designed and conducted a forest attributes study that recorded data on dominant herbs, tree and shrub seedlings and substrate cover type present within each of the forest mitigation areas. In addition, the number and species composition of basal sprouts, discrete saplings, and mature shrubs were also assessed. The objectives of the study were to extrapolate from evidence gleaned from germinated and recruited woody tree species, shrubs, and herbaceous species and predict future forested stand composition. Based upon the data collected in the field, management strategies, i.e. selective thinning, will be identified that would accelerate desirable vectors and that will optimize forested habitat for the ovenbird, hairy woodpecker, and the scarlet tanager. Mr. Park was responsible for all data analysis and writing the Methods, Results, and portions of the Discussion sections of the report.
Review of Statistical Analysis of Groundwater Data Laurel Park Landfill Naugatuck, CT	2002	Mr. Park critically reviewed a statistical analysis of groundwater data conducted by others relative to the assessment of cap effectiveness under EPA jurisdiction. Upon the completion of the review Mr. Park identified several problems with the analysis, offered up suggested analyses and conducted an independent assessment of the data. Specifically a linear regression analysis, parametric prediction interval analysis, and a non-parametric tolerance interval analysis were conducted. Additional analyses included a Kolmogorov-Smirnov D-test. All analyses and interpretations of data were presented in a report that was appended to the overall 5-year Multi-Site Review report.
Review of Statistical Analysis of Groundwater Data Beacon Heights Landfill Beacon Falls, CT	2002	Mr. Park critically reviewed a statistical analysis of groundwater data conducted by others relative to the assessment of cap effectiveness under EPA jurisdiction. Upon the completion of the review Mr. Park identified several problems with the analysis, offered up suggested analyses and conducted an independent assessment of the data using CHEMSTAT. Specifically a linear regression analysis, parametric prediction interval analysis, and a non-parametric tolerance interval analysis were conducted. Additional analyses included a Mann-Whitney U-test. All analyses and interpretations of data were presented in a report that was appended to the overall 5-year Multi-Site Review report.
Wetland Functions/Values Assessment and Designed Wetland Development CRRA Wallingford, CT	2001	Mr. Park conducted a Wetland Functions and Values Assessment of onsite wetlands present upon a contaminated 45-acre property adjacent to the Wallingford Landfill for the Connecticut Resources Recovery Authority (CRRA). The functional assessment was conducted in accordance with the ACOE Highway Methodology and utilized surface water and shallow groundwater data to assess the degree to which onsite wetlands processed the landfill leachate plume. Mr. Park wrote the Wetland Functions and Values Assessment Report, which summarized all data, impacts, and compensation. Mr. Park designed a conceptual wetland mitigation plan that provided for the processing of a landfill leachate plume.
Aquatic Resources Calpine Energy Proposed Power Plant Lawrence, OH	2001	Mr. Park was responsible for summarizing water quality, electro-fishing, and Hester-Dendy invertebrate sampling results within the Greenup Pool portion of the Ohio River. Quantitative analyses included correlation, Shannon-Weiner diversity index (H), and an equitability index (J).

Wetland Functional Assessment Millenium Industrial Park Middletown, CT.	2001	Mr. Park conducted a survey of wetland plant communities on an 80-acre parcel situated in central Connecticut. In addition to identifying major plant communities, Mr. Park conducted a wetland Functions and Values Assessment in accordance with the ACOE Highway Methodology. Mr. Park wrote the Wetland Functions and Values Assessment Report, which summarized all data, impacts, and compensation.
Aquatic Resources Calpine Energy Lawrence Energy Center Lawrence, OH	2001	Mr. Park was responsible for summarizing water quality, electro-fishing, and Hester-Dendy invertebrate sampling results within the Greenup Pool portion of the Ohio River. Quantitative analyses included correlation, Shannon-Weiner diversity index (H), and an equitability index (J). Mr. Park also compiled CORMIX input parameters.
Confidential Pipeline Client, *Betula nigra* and *Gentiana crinata* surveys, Various sites, NH.	2000	The New Hampshire Natural Heritage Bureau identified several areas intersected by the proposed pipeline alignment potentially containing state listed threatened plant species. Mr. Park conducted quantitative surveys for both Betula nigra (river birch) and Gentiana crinata (fringed gentian) within the areas of interest. Mr. Park located both species and quantitatively sampled percent cover, in addition to numbers of associated plant species. The population of each plant species was flagged off and subsequently surveyed prior to pipeline construction.
Article X Aquatic Resources Impact Assessment New York Power Authority 500 MW Charles Poletti Power Project Long Island City, NY	2000	Mr. Park wrote the Aquatic Resources section of an Article X application that discussed fish biology/life history, entrainment impacts and impingement impacts. Mr. Park also identified all historical studies conducted within the vicinity of the facility. Mr. Park conducted an assessment of diel trends in entrainment with a one-way ANOVA. In addition, general patterns in both entrainment and impingement were discussed.
Article X Aquatic Resources Impact Assessment Mirant Energy Proposed 750 MW Bowline Unit 3 Haverstraw, NY	1999-2000	Mr. Park wrote the Aquatic Resources section of an Article X application that discussed fish biology/life history, entrainment impacts, impingement impacts, and thermal plume impacts. Data analysis included simple linear regression to obtain predicted Bowline Unit 3 100% CMR (Conditional Mortality Rate) values from CEMR model generated CMR values; flow-weighting CMR values through ontogenetic progression (eggs, YSL, PYSL, JUV), and developing a total length (TL) adjustment factor for each fish to reflect the percentage of a given lifestage susceptible to entrainment with the use of a Johnson wedge-wire screen, i.e. <15mm TL. In this manner, conditional entrainment mortality rates were developed for the seven fishes of concern. In addition to the manipulation of CMR values, a thermal assessment analysis and an Equivalent Adult Loss calculation were also conducted. This power plant was successfully permitted.
Article X Terrestrial Resources Impact Assessment Mirant Energy Proposed 750 MW Bowline Unit 3 Haverstraw, NY	1999-2000	Mr. Park was responsible for the characterization of natural resources on the Bowline parcel in Haverstraw, NY. Natural resource characterization included a quantitative study of terrestrial plant communities, wetlands, and a wildlife characterization, including an impact assessment. Mr. Park summarized the findings in the Terrestrial Ecology section of a permit application submitted under New York State's Article X process.

EFH Impact Assessment Mirant Energy Proposed 750 MW Bowline Unit 3 Haverstraw, NY	1999-2000	Mr. Park developed an Essential Fish Habitat (EFH) Impact Assessment report that discussed EFH fish biology/life history, entrainment impacts, impingement impacts, Equivalent adult losses, thermal plume impacts, and included an assessment of Best Technology Available (BTA).
Helonias bullata Survey AES Red Oaks Power Plant Facility Sayreville, NJ	1999	Mr. Park's responsibilities included designing and executing a field survey for the federally listed (threatened) swamp pink (Helonias bullata) with data analysis. Sampling included establishing non-randomized 10 meter radial plots along linear transects; identifying all plant species within the plots; constructing species-area curves to ensure adequate sampling; characterizing wetland sub-communities with Sorenson's index of similarity (C_N); and presenting an analysis of the field data in a technical report. The final report was submitted to the U.S. Fish and Wildlife Service who agreed with the conclusion that the swamp pink was not present on the AES site.
Muddy River Restoration Project Boston Parks & Recreation Dept. Boston, MA	1998	Mr. Park conducted a feasibility study associated with the proposed restoration of the Muddy River. The study results were presented in an Environmental Notification Form (ENF), which was presented to MEPA. The study included a characterization of wetland and aquatic resources in addition to a dredging feasibility assessment, including dredged material volumes, and dredged material treatment.
Aquatic Macrophyte Study Franklin Park Ponds and Lakes Study Grant Boston Parks & Recreation Dept. Boston, MA	1998	Mr. Park developed and conducted a study that assessed the effects of nutrient loading and sediment thickness on the distribution of aquatic macrophytes. Sampling was conducted along linear transects within 1m x 1m PVC quadrat. Data collection included identifying all macrophytes, estimating % cover, measuring water depths, taking secchi disk readings, and collecting sediment samples. Sediment samples were measured for TKN, total N and total P, ammonium, and phosphates.