PROFESSIONAL PROFILE



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EDUCATION
MS, Environmental Science,
Drexel University
BS, Environmental Science,
Drexel University

PROFESSIONAL LICENSES
Certified Senior Ecologist

KariAnne Czajkowski, Certified Senior Ecologist

Principal Scientist

EXPERIENCE SUMMARY

Ms. Czajkowski is a Principal Scientist and Roux's Ecological Risk Assessment Practice Leader with over twenty years of environmental project support experience, primarily focused on ecological risk evaluations and sediment remedial investigations and remedial actions. She holds a BS in Environmental Science and an MS in Environmental Science from Drexel University. Her expertise encompasses project management, investigation design, implementation, sampling, assessment activities, and technical document preparation and review. Ms. Czajkowski has experience with State and Federal agency-led projects, including California, New Jersey, Pennsylvania, New York, Ohio, and Florida State environmental regulatory agencies; United States Environmental Protection Agency (USEPA) Regions 2, 3, and 9; as well as the Government of Bermuda and the Canadian Ministry of Environment and Climate Change. She has extensive experience conducting screening level and ecological risk assessments and sediment remedial investigations. Additionally, her expertise extends to development, design, and negotiation of ecological risk-based remediation cleanup strategies under both state and federal programs. Ms. Czajkowski has also participated in international ecological investigations of threatened and endangered sea turtle populations and nesting grounds on the Pacific Coast beaches of Costa Rica.

She is an active Steering Committee member of the New Jersey Society of Women Environmental Professionals. Ms. Czajkowski is also a participant on the New Jersey Department of Environmental Protection (NJDEP) Ecological Risk Assessment Stakeholder Workgroup and co-author and trainer of the NJDEP Ecological Evaluation Technical Guidance. She has served as the former President, Vice President, and member of the Board for the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry. Additionally, Ms. Czajkowski served as a member of the Interstate Technology Regulatory Council Contaminated Sediments – Bioavailability and Remediation teams.

TECHNICAL SPECIALTIES

Ms. Czajkowski specializes in Sediment Remedial Investigations, Sediment Remedial Design, Ecological Remedial Investigations, Ecological Risk Evaluations, Food Chain Modeling, Sediment Background Evaluations, Bioavailability Assessments, Biological Surveys, and Ecotoxicological Studies.

REPRESENTATIVE PROJECTS

- **Confidential Business Client – Perth Amboy, New Jersey.** Designed and actively managed a complex multi-phased sediment remedial investigation to support completion of an ecological remedial investigation for a former waste solvent recycling facility, including successful establishment of and delineation to background threshold values and development of a sediment remedial footprint. The facility is located within a Brownfields Development Area along the Arthur Kill tidal strait. Established and successfully negotiated an off-site source argument for numerous metals, pesticides, and polycyclic aromatic hydrocarbons (PAHs). Completed preliminary design assessment and a remedial alternatives and cost analysis, including development of a three-dimensional model of sediment impacts to support selection of a sediment remedy to achieve site-wide sediment concentrations equal to or less than the background threshold values using a surface weighed average concentration approach.

- **Compressed Gas Distribution Facility – Morris County, New Jersey**. Designed and completed a multi-phased ecological remedial investigation and risk assessment of a former compressed gas distribution facility in Morris County, New Jersey. Incorporated specialty

analytical measures, including polychlorinated biphenyls congeners, methylmercury, and acid volatile sulfide analysis to assist in source identification and to evaluate the potential for bioavailability of sediment impacts to aquatic receptors. Developed and implemented an ecological risk assessment to address copper, zinc, mercury, and PCB impacts, including sediment and pore water sampling, biological surveys, sediment toxicity tests, food chain modeling, and an extensive background investigation to quantify co-mingled contributions from a neighboring Superfund site. Successfully negotiated a joint remedial strategy to address the comingled sediment impacts identified under both state and federal cleanup programs. Designed a sediment remedy and received New Jersey Department of Environmental Protection (NJDEP) approval of an ecological risk-based, sediment remedial action workplan to address the commingled sediment impacts at the Site. Managed the preparation of technical and bid specifications; selection of a remedial contractor; and development of all required land use, discharge, and treatment work authorization permitting needs.

- **Flooring Manufacturing Facility – Salem County, New Jersey.** Developed and negotiated an ecological risk assessment framework to address impacts from polynuclear aromatic hydrocarbons, phthalates, metals, polychlorinated biphenyls, and pesticides to surface water and sediment in an expansive tidal creek. Managed and conducted the ecological risk assessment, including sediment, surface water, and fish tissue sampling; sediment toxicity testing; biological surveys; food chain modeling; and delineation of visually and chemical-impacted sediment through the advancement of over 200 sediment cores. Developed ecological risk-based preliminary remediation goals for sediment impacts. Assisted in the design and implementation of a risk management decision framework to facilitate the client's understanding and ability to prioritize and evaluate risks associated with sediment impacts and to develop and evaluate risk mitigation options. Assisted in the completion of an engineering feasibility analysis of remedial options to address impacted sediment within the creek system. Completed and achieved USEPA approval for Resource Conservation and Recovery Act Human Health under Control Environmental Indicator for the facility, including a human health risk assessment to address arsenic, lead, and mercury impacts in sediment to recreational fishermen and trespassers.
- **Former Inorganic Chemical Manufacturing Superfund Site – Middlesex County, New Jersey.** Completed a comprehensive site characterization for a site utilized for the production, sale, and distribution of zinc- and copper-based inorganic chemicals in Middlesex County, New Jersey. Designed and implemented a sediment and surface water field investigation for on and off-site surface water features. Developed and implemented a screening level ecological risk assessment and focused site-specific baseline ecological risk assessment of the waterways, including sediment, pore water, and sediment toxicity sampling. Utilized the results of the risk assessment to refine the understanding of ecological exposure risks, assess the bioavailability of site-related metals in sediment, and establish response actions to address ecological risk at the Site.
- **Active Refinery – Gloucester County, New Jersey.** Completed a facility-wide ecological remedial investigation that involved an extensive analysis of habitat types, drainage conditions, historic refinery operations, regional background, and file reviews of a neighboring Superfund site to support development of a comprehensive conceptual site model and delineation of site-related impacts. Developed, implemented, and managed an ecological risk assessment of a 170+ acre wetland system located adjacent to the refinery along the Delaware River to identify and quantify ecological risk associated with polychlorinated biphenyls (PCBs), PAHs, and metals impacts within the wetland system.
- **Former Pharmaceutical Manufacturing Facility – Morris County, New Jersey.** Designed and implemented a multi-phased ecological risk assessment to evaluate the ecological risk to a complex mix of seven upland and aquatic habitat zones at a former pharmaceutical manufacturing facility from volatile organics, pharmaceuticals, alcohols, semi volatile organics, metals, and pesticide impacts. Studies included surface soil, sediment, pore water, and surface water bulk chemistry sampling; earthworm, benthic, and fish tissue sampling; avian and mammalian surveys; and earthworm and benthic macroinvertebrate toxicity testing. Developed an ecological risk-based remedial footprint, limiting remediation to a select portion of the upland habitat.
- **Former Refinery – Hudson County, New Jersey.** Provided ecological risk assessment and sediment remedial investigation expert support services to the Licensed Site Remediation Professional (LSRP) of record for the sediment area of concern located within the Newark Bay Superfund Site, including peer review of the sediment remedial investigation effort, background studies, and initial development of a remedial and coordination strategy with the USEPA to address site-related chemical and product impacts within the waterway.
- **Creek Greenway – Mercer County, New Jersey.** Completed seven ecological risk evaluations as part of expanded environmental investigations being completed for a Municipality in Mercer County under the NJDEP Brownfields Revitalization Program. The ecological evaluations were completed to support the municipality with their master plan for the area, which includes redevelopment and restoration of

properties situated along a significant waterway into recreation areas as part of a larger greenway.

- **Confidential Superfund Site – Bergen County, New Jersey.** Oversaw the completion of a screening level ecological risk assessment of a freshwater brook for a multi-party Superfund site located within an industrial park to evaluate potential adverse effects on the aquatic system from a groundwater plume namely impacted with chlorinated volatile organic compounds. The investigation included the collection and assessment of an extensive network of overburden groundwater and surface water samples over a six-year timeframe. The ecological risk assessment was completed in parallel with a human health risk assessment and received USEPA concurrence of a no ecological risk conclusion, ultimately eliminating the need for an ecological risk assessment.
- **Former Gas Works Site – Middlesex County, New Jersey.** Developed and implemented an ecological risk assessment of a major river in Middlesex County to investigate the potential risk to the aquatic community associated with a manufactured gas plant (MGP)-related groundwater plume. A detailed characterization of the riverbank was completed to assess a groundwater to surface water migration pathway, including sediment, pore water, and surface water sampling; sediment toxicity testing; and narcosis modeling to delineate impacts in the river and to assess the exposure and bioavailability of MGP residual constituents to aquatic receptors in the river. Environmental Risk Assessment (ERA) activities resulted in a no further action from the NJDEP for the river.
- **Former Manufactured Gas Plant – Morris County, New Jersey.** Completed a comprehensive, multi-phased ecological remedial investigation and ecological risk assessment of a vast freshwater wetland and drainage system, including surface water, sediment and pore water bulk chemistry analysis within the on-site drainage feature, and off-site wetlands to delineate metals and PAHs impacts. The investigation included forensic studies; a detailed background investigation for PAHs, silver, cadmium, and antimony sources; the collection of over 95 sediment cores; and sediment toxicity testing to assess groundwater to surface water and overland flow migration pathways. Site-specific ecological risk assessment data was generated, used to establish and achieve delineation of sediment impacts, and develop ecological risk-based cleanup goals. Engaged in risk management and remedial decision-making negotiations with the NJDEP, and ultimately obtained NJDEP approval of the proposed ecological risk-based remedy.
- **Former Telecommunications Research and Development Facility – Hopewell, New Jersey.** Performed an ecological evaluation of the environmentally sensitive areas in and around the vicinity of the Site, evaluating the potential for adverse impacts to aquatic receptors to detected chemicals discharged into an on-site creek system and pond. Developed and implemented an ecological risk assessment workplan to evaluate the impacts of polychlorinated biphenyls, metals, and pesticides on benthic macroinvertebrates, fish, piscivorous birds, and herbivorous and omnivorous mammals, including sediment, surface water, soil and fish tissue sampling; sediment toxicity testing; and dietary modeling. Ecological risk assessment activities resulted in a no further action from the NJDEP for the creek system and pond.
- **Former Gas Plant – Santa Barbara County, California.** Managed the development of an ecological risk-based remediation of a 69-acre former gas plant along the Gaviota Coast of Santa Barbara County under both USEPA and the California Department of Toxic Substances Control.
- **Former Military Air Station Annex – Morgan's Point, Bermuda.** Designed and oversaw the implementation of a sediment investigation workplan that evaluated potential impacts to two bay areas adjacent to a former military installation at Morgan's Point, Bermuda. Developed an investigation report for the Government of Bermuda to assist them in determining a path forward for remediation and redevelopment of the bay areas for use as a mixed use residential and commercial property.
- **Former Leading Plumbing Manufacturer Facility – Mercer County, New Jersey.** Performed an ecological evaluation to address potential ecological concerns to a deciduous forest with isolated wetlands, a drainage canal, and swamp as a result of metal impacts identified in surface soil and sediment. Developed, implemented, and completed an NJDEP-approved ecological remedial investigation and risk assessment to better understand the extent of sediment and surface water impacts and ecological exposure risks associated within the drainage canal both on- and off-site and within the swamp. Designed and oversaw the completion of a sediment and soil remedial action within on- and off-site portions of the drainage canal and isolated off-site upland.
- **Refinery – Gloucester County, New Jersey.** Completed a site-wide ecological evaluation to support remedial investigations being completed at the Site following site acquisition. The ecological evaluation focused on sensitive natural resources, primarily associated with three major issues identified as part of the NJDEP's 2005 Delaware River Initiative, including free-product impacts on the Delaware River, impacts to wetland, and off-site migration of impacted groundwater and light non-aqueous phase liquids.
- **Electrical Utility Service District Center – Somerset County, New Jersey.** Performed an ecological evaluation of the local

electrical utility service district facility to characterize ecological conditions and to identify impacts and potential adverse ecological effects resulting from site-related contamination, including polynuclear aromatic hydrocarbons, polychlorinated biphenyls, cadmium, and copper. Assisted in the surface soil, sediment, and groundwater collection efforts, and development and completion of sediment remedial investigation and remedial action activities of a drainage canal.

- **Midstream Pipeline – Belmont County, Ohio.** Coordinated and managed the design and implementation of multiple primary headwater habitat assessments to determine the presence of cold-water adapted species of fish, salamanders, and macroinvertebrates, and ultimately the implication on construction of several proposed pipeline stream crossings.
- **Chemical Manufacturing Facility – Humboldt County, Pennsylvania.** Completed an initial ecological screening evaluation of sediment remedial investigation and biological survey data for a creek that bisects a chemical manufacturing facility to support development of an interim remedy, consisting of an impermeable sediment cap, to isolate free-phase materials in groundwater from further migration to sediment and surface water at the Site. Completed a third-party review of ecological evaluations of three surrounding reservoirs to understand the interrelationship between historic releases, site use, and potential exposures on ecological receptors associated with reservoirs to develop a comprehensive conceptual site model for the facility.
- **Electrical Utility Service District Center – Morris County, New Jersey.** Developed an ecological risk assessment workplan for a river, including a benthic macroinvertebrate survey, sediment sampling, a habitat assessment, and pore water sampling to evaluate impacts to the river from a former site-related groundwater plume. Developed a passive diffusion bag deployment and sampling workplan to evaluate pore water impacts in the river from a groundwater plume. Calculated surrogate groundwater natural resource injury estimates for the Site.
- **Former Electric and Gas Switching Station Facility – Mercer County, New Jersey.** Supported the development of an ecological risk assessment, including preparation of field sampling and analysis matrix to assist in a screening level problem formulation. Identified methods to establish exposure estimates and calculate ecological risk. Outlined ecological screening criteria necessary to establish appropriate analytical methods.

PROFESSIONAL AFFILIATIONS

Society of Environmental Toxicology and Chemistry (SETAC) – National and Local affiliations

Society of Women Environmental Professionals – Greater Philadelphia and New Jersey Chapters

Sediment Management Workgroup

Ecological Society of America

PUBLICATIONS

Weatherwax, S. and K. Czajkowski, 2023. The Good, the Bad, and the Confusing Parts of Coordinating a Sediment Remedial Investigation and Design with a Waterfront Brownfield Redevelopment. The Eleventh International Conference on Remediation and Management of Contaminated Sediments. Austin, Texas. January 2023.

Czajkowski, K.A. and S. Weatherwax, 2019. Ecological Risk Assessment of Metals and Polychlorinated Biphenyl Impacts in a Freshwater Wetland Complex. The Tenth International Conference on Remediation and Management of Contaminated Sediments. New Orleans, Louisiana. February 2019.

Weatherwax, S. and K. Czajkowski, 2019. Quantification of MGP-Related, Ecological Impacts within a High-Quality Wetland Complex. The Tenth International Conference on Remediation and Management of Contaminated Sediments. New Orleans, Louisiana. February 2019.

Czajkowski, K.A., Weatherwax, S. 2017. Ecological Risk Assessment: Crossroads between a NJDEP LSRP-Led and USEPA-Led Cleanup. The Ninth International Conference on Remediation and Management of Contaminated Sediments. New Orleans, Louisiana. January 2017.

Mayes, M., Beech, R, Czajkowski, K.A., Lees, R, McKeever, K and Weatherwax, S. 2017. Challenges of International Sediment Investigation and Remediation at a Former U.S. Naval Air Station Annex in Bermuda. The Ninth International Conference on Remediation and Management of Contaminated Sediments. New Orleans, Louisiana. January 2017.

Czajkowski, K.A. and Seelman, E. 2014. "Ecological Risk Assessment of MGP Contaminants in the Raritan River." The 5th International Symposium & Exhibition on the Redevelopment of Manufactured Gas Plant Sites. Destin, Florida. April 2014.

Czajkowski, K.A. 2009. "Ecological Investigation and Sediment Characterization of a Tidal Freshwater Creek System." Fifth International Conference on Remediation of Contaminated Sediments. Jacksonville, Florida. February 2009.

PRESENTATIONS

Czajkowski, K.A., 2018. Risk Management Concepts for Ecological Risk as Applied in Site Remediation. Montclair State University Continuing Education for Environmental Professionals (CEEP) Program.

Czajkowski, K.A. 2016. Risk Assessment in Remediation: A Review of Principles and Applications in New Jersey's Site Remediation Program – An Overview of New Jersey's Ecological Risk Assessment Process. Montclair State University Continuing

Education for Environmental Professionals (CEEP) Program. Montclair, New Jersey.

Czajkowski, K.A. 2016. NJDEP Ecological Evaluation Technical Guidance Update. Alpha Analytical Seminar. Edison, New Jersey.

Czajkowski, K.A. 2016. Framework, Guidance, and Data Needs for Ecological Risk Assessments. Alpha Analytical Seminar. Edison, New Jersey.

Czajkowski, K.A. and Buckley, E. 2014. Techniques, Tools and Tips for Navigating the Ecological Evaluation and Ecological Risk Assessment Process in New Jersey. New Jersey Society of Environmental Women Professionals Seminar. Elmwood Park, New Jersey.

Czajkowski, K.A. 2013. The Growing Importance of Bioavailability in Ecological Risk Assessment. Langan's Contaminated Sediments: Linking Risk & Remedy Seminar. Jersey City, New Jersey.

Czajkowski, K.A. 2011. "Ecological Risk Assessment – Data Development, Methods and Tools." NJDEP Ecological Evaluation Technical Guidance Training Series Program. Trenton, New Jersey. August 2011.

Czajkowski, K.A. and Kenney, L. "Environmentally Conscious Site Development." American Institute of Architects – Roadshow Series. 2007, 2009, and 2010, and Rutgers University – Edward J. Bloustein School of Planning and Public Policy, 2009.

Czajkowski, K.A. 2002. "Ecological Risk Evaluations in New Jersey: Concepts and Methodologies." Presented at the Remedial Action Decision Making Workshop, Rutgers University Continual Education – Cook College. New Brunswick, New Jersey.