

TECHNICAL SPECIALTIES

Design, permitting, and construction expertise for environmental remediation projects, Brownfields redevelopment, wetlands mitigation, ecological risk assessment, Engineered Natural Systems, stormwater and wastewater management systems.

EXPERIENCE SUMMARY

Over 25 years' experience; Principal Engineer, Senior Engineer, Project Engineer and Staff Engineer with Roux Associates, Inc.; Field Engineer with Geotech, Inc.

CREDENTIALS

B.S., 1995, Civil and Environmental Engineering, Villanova University.

Licensed Professional Engineer in Alabama, Florida, Maryland, New Jersey, Pennsylvania, Tennessee, West Virginia.

Licensed Site Remediation Professional in New Jersey
OSHA 40-Hour Health and Safety Training.

Completed Wetland Delineation in New Jersey Continuing Professional Education Program

PRESENTATIONS & PUBLICATIONS

Paper and presentation published at the 2003 Villanova Stormwater Management Symposium, "Constructed Treatment Wetlands for Stormwater Management: An Overview of the Technology and Two Case Studies," Meredith Harris and Walt Eifert.

Paper and presentation published at the 2009 Tenth International In Situ and On-Site Bioremediation Symposium presented by Battelle, "Sustainable Leachate and Stormwater Management Using Biologically mediated Constructed Wetland and Phytotechnology Processes," Tyler Schott, Meredith Harris, Walt Eifert and Joseph McKeon.

Presentation for 2010 NJ Environmental Law Forum, "Construction Stormwater Requirements Update, Turbidity Effluent Limitations."

Presentation for 2017 NJ Environmental Law Forum, "Overview of NJDEP Division of Land Use Regulation Proposed Rule Modifications."

Webinar, November 2017, "Renewable Energy Production on Contaminated Properties."

Article for NJ Builders Association spring 2019 Dimensions publication, "The Emerging Contaminant Challenge, How PFAS Can Impact Your Deals," George Tyler, Margaret Carmeli and Meredith Harris.

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

New Jersey Builders Association – Shore Builders

NJBA Shore Builders Environmental Committee

KEY PROJECTS**Expert Witness/Litigation Support**

- Expert witness and litigation support for a lawsuit against a municipality for denial of a zoning board approval for development. Prepared an expert report that addressed stormwater runoff quantity and quality from the site, evaluated civil engineer's stormwater model and design, evaluated downstream impacts, compliance with local and state stormwater regulations.
- Expert witness and litigation support for a high-profile regulatory takings case against the State of New Jersey. Prepared an extensive expert report that addressed irreversible losses associated with flooding, wetland fill, habitat destruction, impacts to threatened/endangered species, migratory birds, saltwater intrusion, nonpoint source pollution, and mitigation. We performed regulatory evaluation of NJDEP permits (CAFRA, Freshwater Wetlands, Flood Hazard Area and Waterfront Development) that would be required under various development scenarios. Additionally, reviewed and responded to various expert reports and supplements submitted by other parties.
- Expert witness on behalf of insurer to assess water damage claims allegedly caused by multiple failing septic systems at a site in New Jersey.
- Provide litigation support for cost allocation for landfill closure, remediation and O&M at a site in Pennsylvania.
- Provided settlement support for coastal wetlands violation in southern New Jersey. Prepared an extensive settlement document and negotiated with NJDEP division of land use and NJ office of the attorney general for favorable client settlement. Attended multiple meetings with NJ office of the attorney general and the judge presiding over the case.
- Expert witness and litigation support for a lawsuit against a municipality for denial of a zoning board approval for development of a school. Includes evaluation of septic and groundwater supply issues.

Alternative Landfill Covers, Engineered Natural Systems and Stormwater Design

- Stormwater and process water investigation and design for active secondary metals refining facility in Pennsylvania. Activities include investigation of existing, aging sewer system to determine flows and outlets, feasibility study to evaluate cost-effective stormwater and process water remedies and BMPs and prepare document to satisfy obligation under a USEPA Consent Decree.

- Design, construction management, O&M and performance tracking for 20-acre alternative cover system for a CERCLA site in southern New Jersey. Alternative cover system includes 15,000 phytotechnology plantings (hybrid poplars) and engineered soil profile to manage the site water budget and minimize groundwater infiltration. Project included engineering design, water budget development, permitting, tree procurement, planting, final reporting, O&M plan development. O&M and performance tracking of the phytotechnology plot/alternative cover system are ongoing.
- Design, construction, O&M and performance tracking for 15-acre alternative landfill cover system including phytotechnology plantings. Phyto alternative cover saved millions of dollars when compared to a traditional RCRA landfill cap. The objective of the project was to mitigate migration of zinc leachate in a former industrial landfill. Project included planting of approximately 18,000 hybrid poplar trees, willows and several indigenous species on the landfill. Project included engineering design, water budget development, tree procurement, planting, final reporting, O&M plan development. O&M and performance tracking of the alternative landfill cover/phytotechnology plot are ongoing.
- Design and construction management for constructed treatment wetlands system at a manufacturing facility to treat facility stormwater runoff and non-contact cooling water with high zinc concentrations. The constructed treatment wetlands system design was retrofitted into existing lagoons for cost savings. Prepared detailed technical specifications and design drawings for bidding and construction. Provided construction oversight to ensure that the constructed wetland system was installed in accordance with project specifications. Developed O&M manual and provided operator training and start-up assistance. The constructed wetland system has been reducing zinc concentrations in stormwater by more than 80%.
- O&M, performance tracking and repair/upgrade program for a 100,000 gpd constructed wetland that treats zinc-impacted leachate. The constructed wetland system has been operating since 2000 and was hit by several named hurricanes. In order to repair hurricane damage and increase the treatment capacity of the constructed wetland, a major repair and upgrade project was performed in 2007. The repairs and upgrades included a more extensive collection and distribution system to minimize flow short circuiting through the system, replenished mushroom compost (sulfate and carbon) to provide increased treatment, repairs to hydraulic control structures. Prepare detailed engineering design, bidding, construction management, startup procedures and performance tracking. System is currently removing over 95% of zinc loading in the treated landfill leachate.
- Engineering design to integrate innovative stormwater management techniques into site design for an aluminum smelter located in Iceland. Stormwater management techniques include engineered soil profiles, constructed wetlands and retention ponds to retain and treat industrial stormwater runoff. Utilized site-specific climate, vegetation, geotechnical, agronomic and runoff data to develop cost-effective stormwater management techniques. Coordinated column testing program to design engineered soil profile using on-site soils. Worked with site design engineers and landscape architects to incorporate innovative stormwater management into facility plan.
- Conceptual design and evaluation to retrofit innovative stormwater management techniques at commercial sites in Philadelphia. The evaluations were performed in order to reduce the monthly stormwater surcharge fees which were as high as \$10,000/month at some sites. Stormwater best management practices included green roof, vegetated filter strips, constructed wetlands, extended detention ponds and rain harvesting. Prepare application for submission to Philadelphia Water Department to reduce fees.
- Conceptual design and evaluation to retrofit innovative stormwater management techniques at a 250-acre site with 24 outfall locations. Candidate technologies included constructed wetlands, phytotechnology, vegetated filter strips, biofilters, engineered soil profiles, porous pavement, green roofs and structural modifications. Provided conceptual design, cost estimates, permitting evaluation, prioritization and recommended capital improvements program and implementation schedule.
- Pre-design site characterization and engineering design for the use of innovative technologies to manage leachate from two landfills at a former manufacturing facility in Tennessee. Pre-design activities included leachate flow monitoring and characterization to determine the most appropriate management option. Installed pilot scale phytoremediation plantings in the landfill to make final species selection. Developed preliminary engineering design for recirculation and consumptive use of leachate in the phytoremediation plot.

- Prepared/implemented a rooting test greenhouse study to evaluate the viability of several species under various soil and irrigation conditions for phytotechnology applications at a site in South Carolina. Activities included selection of grass/tree species; construction/set-up of greenhouse rooting test experiment; weekly monitoring; final evaluation and reporting; and recommendations for tree and grass species to be used for various phytotechnology applications.
- Prepared/implemented a greenhouse rooting test and toxicity study to evaluate several species under various soil and irrigation conditions at a site in Michigan. Contaminated ground water treated to various levels of TDS was used to irrigate the trees in the study. Activities included selection of tree species; construction/set-up of greenhouse rooting test; weekly monitoring; final evaluation and reporting; and recommendations for pilot study.
- Design and construction activities for pilot scale constructed wetlands to treat landfill leachate for aluminum manufacturing company. This innovative technology utilized cattails, phragmites and selected media to treat leachate containing cyanide and fluoride. Design includes four double contained lagoons with selected wetlands vegetation.
- Prepared stormwater model for non-delineated waterway in northern New Jersey. Necessary to obtain Phase II Stream Encroachment Permit for construction activities relating to pumping station modifications. Conceptual model was developed to identify drainage areas, streams, stormwater flow, and land use. A detailed storm water model was developed based on the conceptual information utilizing a computer model. Storm water hydrographs were calculated for the 100-year storm for fully developed conditions.

Brownfields/Redevelopment

- Prepared Environmental Impact Statement to support development of town homes on a Brownfields site in northern New Jersey. Project included assessment of water supply, sewage disposal, wetlands and other ecologically sensitive resources, air quality as well as provisions for construction within contaminated soils and vapor intrusion.
- Prepared Environmental Impact Statement to support subdivision and redevelopment of large movie theater parking lot in southern New Jersey. Project included assessment of water supply, sewage disposal, wetlands and other ecologically sensitive resources, air quality as well as provisions for stormwater management and groundwater

protection as the site was located within a Wellhead Protection Area.

- Freshwater wetland analysis and permitting for a vacant property in Camden County, NJ. Wetland analysis and Freshwater Wetlands Letter of Interpretation permit preparation were conducted for potential development and sale of the property.
- Wetlands evaluation and permitting for a vacant property in Atlantic County, NJ. Activities include preparation of NJ Pinelands Commission wetland and property development permitting for construction of a single-family home, and coordination with NJ Pinelands Commission.
- Delineated wetlands and obtained a Jurisdictional Determination for a vacant property in Texas along the Houston Bay in preparation for a property transaction. Worked with local USACE representatives and the regional manual to obtain the determination.
- Obtain Letters of Interpretation (LOI) pursuant to NJDEP's Freshwater Wetlands Protection Act rules throughout the State of New Jersey to facilitate property redevelopment and transactions.
- Ecological Risk Assessment support for one of largest Brownfields redevelopment sites in NJ. Included sediment/surface water sampling, fish tissue sampling, and development of the Tier II Ecological Risk Assessment (ERA).
- Design, permitting and construction support for sanitary wastewater constructed treatment wetland system at a large research/development and office facility in southwestern Pennsylvania. The constructed wetland system was installed to replace an aging traditional sanitary WWTP that was failing. Portions of the existing WWTP were utilized as part of the constructed wetland design including conveyance and the disinfection unit. Prepared the PADEP Water Quality Management Part II permit application, detailed engineering design, design drawings and construction support for the constructed wetland system. An O&M plan was developed, and Roux provided start-up and O&M assistance. The constructed wetland system is currently meeting all NPDES discharge limits and PADEP has permitted decommissioning of the old sanitary WWTP.
- Design, permitting and development of a stormwater management plan for development and upgrades to a recreation complex in Oxford Alabama. Remedy for site included capping with tennis courts and athletic fields to mitigate PCB-impacted soils.

- Engineering and construction support for \$5MM dredge spoils remediation/capping project at one of the largest Brownfields redevelopment sites in New Jersey. Activities included preparation of detailed bid specification package, solicitation of contractor bids, construction engineering support, QA/QC and post-construction reporting. The parcel is currently slated for donation to the county as green space.
- Engineering and construction support for \$30MM remediation project at one of the largest Brownfields redevelopment sites in New Jersey. The remediation includes a combination of excavation/disposal, soil blending and capping for soils impacted by naturally occurring radioactive materials (NORMs), PCBs and metals. Activities include preparation of detailed bid specification package, solicitation of contractor bids, construction engineering support, QA/QC and post-construction reporting. The parcel will be redeveloped into mixed use residential and commercial upon completion of remedial activities.
- Provided support for redevelopment of a contaminated site for a solar farm. Project included wetlands delineation and Coastal Zone Management permitting, design support to assist client with minimizing impacts to T&E species habitat, intrusive workplans, construction planning and inspection, documentation that contaminated soils and engineering controls were properly managed. Provide ongoing environmental O&M support.

Wetlands, Coastal Zone, Flood Hazard and Ecological Permitting, Design and Mitigation

- Tidelands support for major retail center located in Port Authority NY-NJ. Prepared grant applications for filled tidelands on several lots. Supported counsel with title insurance claims for tidelands missed during property acquisition.
- Prepared Freshwater Wetlands and Waterfront Development permits for remedial activities at a manufacturing facility in Morris County, New Jersey. Permits included mitigation plans for streambank restoration and in-place restoration of remediated wetlands as well as purchase of off-site mitigation bank credits. Developed application materials for a Tidelands Lease to perform remedial activities adjacent to a tidal waterway. Performed construction oversight to ensure all remedial activities were performed in accordance with permits.
- Wetland and Coastal Zone Management permitting (including flood hazard area compliance) for large multi-phase rail expansion project at South Jersey petroleum terminal both with NJDEP Division of Land Use Regulation and U.S. Army Corps of Engineers. Project included procurement of

individual permits and modifications, evaluation of tideland claims status, regulatory negotiation (including violation settlement), threatened/endangered species evaluation/review, and mitigation design. Soil erosion and sedimentation control permits were also obtained.

- Secure tidelands license for closed manufacturing facility in Central Jersey to support property transfer. Project included coordination of survey, property deed research, coordination with NJDEP Bureau of Tidelands and tidelands license application.
- Coastal Zone Management general/nationwide permitting (including flood hazard area compliance) for bank stabilization project adjacent to a landfill along the Delaware River with NJDEP Division of Land Use Regulation and U.S. Army Corps of Engineers. Engineering design was completed for bank stabilization that could withstand tidal fluctuation, storm waves and ice flows on a navigable waterway while also including vegetation to improve the riparian zone along the river. Project also included tidelands claim status evaluation, regulatory negotiation and mitigation design and monitoring for intertidal/subtidal shallows and riparian zone.
- Regulatory negotiation, settlement and permitting for an alleged violation of Coastal Zone Management regulations along the Stone Harbor Canal in Middle Township. Project included settlement support, review of technical and legal documents, and preparation of settlement submissions and permit applications.
- Delineation of wetlands and preparation of wetlands permits for multiple petroleum pipeline projects in order to perform pipeline maintenance/anode bed replacements.
- Assist petroleum pipeline with identification of land-use regulated areas for over 1,000 miles of pipeline in New Jersey. Created GIS-based maps that identify threatened/endangered species habitat, wetlands, floodplains and coastal-regulated areas. These maps are used to determine regulatory requirements prior to performing maintenance activities such as right-of-way vegetation clearing and pipe inspection gage (PIG) excavations.
- Prepared land use permit equivalencies for Superfund site in Gloucester County, New Jersey. Permits included Request for Letter of Interpretation (LOI) for over 200 acres of freshwater wetlands; General Permit (GP) #14 for monitoring well installation in wetlands; and GP#4 for remedial investigation activities in wetlands. Second round of permits were obtained for implementation of the final soil remedy (bank remediation, alternative landfill cover) that

included flood hazard area and freshwater wetlands equivalencies.

- Preparation of Coastal Zone Management and Stream Encroachment permit applications for dock repair project along the Hackensack River in New Jersey. Applications included evaluations of tidelands claims status and impacts to: wildlife; vegetation habitats; historic/archeologic resources; and navigation.
- Provide technical support for establishment of phytotechnology plot within the Pinelands to support a Superfund groundwater remedy. Technical support required to demonstrate that phytotechnology species would not displace or harm native vegetation or alter hydrology within Pinelands area.
- Research viability of commercial wetlands mitigation bank in Virginia. Obtained information from United States Army Corps of Engineers, Virginia Department of Environmental Quality, other local mitigation banks, local environmental preservation groups and local planning boards regarding mitigation bank demand, market value, regulatory requirements and future demand.
- Prepare Freshwater Wetlands and Stream Encroachment permits for remedial activities at a coal tar site in Northern New Jersey. Major Stream Encroachment application included floodplain fill calculations and Freshwater Wetlands application included mitigation plan for in-place restoration of wetlands. Performed construction oversight to ensure all remedial activities were performed in accordance with permits.
- Prepared United States Army Corps of Engineers Nationwide Permit #38 for remedial activities within wetlands at a landfill site in Syracuse, New York. NWP #38 included negotiations with several state and federal agencies and a mitigation plan for in-place restoration of wetlands. Performed construction oversight to ensure that construction activities were performed in accordance with NWP #38.
- Prepared Coastal General permit and Freshwater Wetlands permit, including mitigation plan, for remedial activities at a former manufacturing site in Cape May County New Jersey. Permit application included a mitigation plan for in-place restoration of wetlands and evaluation of tidelands claims status.
- Wetlands permitting and invasive species analysis for a former railyard in NJ. The property formerly operated as a vermiculite manufacturing facility. Activities were part of a CERCLA removal action and included freshwater wetlands and site invasive species analysis, wetlands permitting analysis,

preparation of NJDEP Wetlands Permit Equivalency and development of a wetlands mitigation and invasive species control plan.

- Wetlands permitting for a 37-acre former industrial facility and landfill property located in Middlesex County, NJ. Activities included wetlands analysis, preparation of NJDEP Freshwater Wetlands Letter of Interpretation and General Permit, preparation of NJDEP Coastal General Permit and evaluation of NJDEP tidelands permit requirements.
- NJDEP permitting for a former electroplating facility that also manufactured cables for the aerospace industry. Activities included wetland assessment and preparation of Freshwater Wetlands General Permit, Stream Encroachment Permit, wetlands mitigation plan and NJ Highlands permitting.
- Permit evaluation for an inactive facility in Bergen County, NJ that manufactured specialty gases. Activities include evaluation of NJ Meadowland Commission, NJDEP and USACE permit requirements, and communication with NJ Meadowland Commission, NJDEP and USACE. Activities also included evaluation of local building and demolition permit requirements and communication with local construction official and fire marshal.
- Wetlands mitigation evaluation and regulatory negotiation for slope failure that resulted in wetlands fill at a site in West Virginia. Evaluated several on-site and off-site wetlands mitigation options to determine the most cost effective remedy. Negotiated favorable settlement with regulators and developed final mitigation plan for the site with violations or fines levied.
- Wetlands permitting for remediation of a former orchard at a site in northern New Jersey including a mitigation plan for the wooded wetland area. Performed mitigation performance monitoring and negotiated with state to reduce wetlands monitoring period from five years to one year.
- Mitigation to address an accidental wetland fill at a site in Pennsylvania. Activities included notification and negotiations with USACE, mitigation design and oversight.
- Wetland delineation and procurement of a freshwater wetland General Permit No. 1 for repairs and enhancements to landfill cap in Camden County, New Jersey.

- Wetlands permitting for activities at a former industrial landfill in northern New Jersey. Permits were obtained for investigative activities and final landfill closure construction. Permit included mitigation for wooded wetland areas.
- Wetlands delineation and procurement of a freshwater wetlands General Permit No. 4 for remediation of an active porcelain manufacturing facility in Central Jersey. Project included on-site mitigation design and monitoring.
- Obtain coastal permit and evaluate tidelands claim status for large scale excavation/remediation adjacent to Barnegat Bay.
- Assist client with addressing a fish kill in a stormwater pond on a corporate campus. Activities included water quality monitoring and design of mitigation measures.
- Ecological Risk Assessment support for one of largest Brownfields redevelopment sites in NJ. Included sediment/surface water sampling, fish tissue sampling, and development of the Tier II Ecological Risk Assessment (ERA).
- Ecological Risk Assessment large former industrial site in northern NJ. Included habitat assessment, surface water/sediment sampling program, exposure estimates and SLERA preparation.
- Ecological Risk Assessment for former industrial site in Pennsylvania. Included habitat assessment, surface water/sediment sampling program, exposure estimates and ERA report preparation.
- Ecological Risk Assessment for former industrial site in NJ. Included habitat assessment, surface water/sediment sampling program, bioavailability calculations, statistical analyses, exposure estimates and ERA report preparation.

Capping/Landfill Closure/Remedial Design

- Testing, permitting and design for potable water treatment to supply eye wash stations and showers at an industrial facility. Project included regulatory analysis of OSHA, public water supply and water allocation permit requirements to define required level of treatment and permitting. Tested water to evaluate efficacy of existing treatment and support treatment system design. Designed and specified appropriate treatment train components. Project resulted in significant cost savings for client as preliminarily specified equipment was able to be down graded to a much less expensive system.
- Design, permitting, construction management and O&M for landfill closure at New York State Superfund Site involving large-scale waste

consolidation, capping, wastewater ponds and wetlands mitigation. Performed all aspects of project including pre-design investigations, engineering design, permitting, construction management, QA/QC program, performance evaluation and O&M. Several significant cost-saving measures were negotiated including reduced cap thickness, elimination of certain post-remediation sampling and elimination of groundwater interceptor trench system. Site was reclassified by NYSDEC.

- Engineering support for construction of a containment unit for PCB-impacted soils located adjacent to a creek and within the 100-year floodplain in Alabama. Cover system included vegetated topsoil, low-permeability soil, impermeable geomembrane, geosynthetic drainage layer and rip rap armor to protect against erosion during flood events. Provided oversight and QA/QC for installation of impermeable geomembrane as well as imported soil cover materials. Prepared final construction completion report for submission to USEPA and Deed Restriction. Site received final closure approval from USEPA.
- Engineering, permitting and costing support for closure of a solid waste dump area in California. Support includes permitting evaluation and support for twelve different regulatory programs, options/feasibility analysis, streambed/flow analysis and restoration design.
- Remedial design for capping/lining 2 miles of PCB-impacted ditch within a railroad right-of-way to comply with USEPA consent order. Design included selective excavation, regrading and shaping, lining with geosynthetic material and shotcrete. Performed hydraulic calculations to maintain flow capacity of the ditches to avoid flooding of the surrounding residential area. Prepared construction documentation including detailed technical specifications, design drawings, construction quality assurance plan, BMP plan and dust control plan for bidding and construction. Performed field support/oversight activities for dynamic construction project that included many field changes and multiple interested parties including the responsible party, USEPA, property owner and local residents. Prepared detailed completion report for submission to USEPA and developed O&M plan and procedures for future ditch maintenance activities.
- Engineering and technical support for Settling defendants for 200-acre Superfund site in Rhode Island. Site includes two landfills, an island, various debris fields, old industrial buildings and contaminated sediments within a National Park. Provide support to Settlement Defendants to

evaluate creative and efficient approaches to site assessment and investigation, waste consolidation, landfill capping and O&M, and restoration of the landscape.

- Investigation and engineering design for landfill closure in northern New Jersey under Solid Waste Program. Numerous site permits were obtained including landfill disruption, wetlands, soil erosion, stormwater discharge and landfill closure approval. Investigation activities included methane monitoring, test pitting program and wetlands delineation. Successfully negotiated a reduced final cap thickness that resulted in over \$200,000 in savings. Prepared detailed engineering design for final cover system, stormwater management features and wetlands mitigation. Also participated in public relations activities given the landfill's proximity to residential properties.
- Design, permitting and construction management for cap installation at a highly publicized coal tar site in northern New Jersey under Site Remediation Program. Developed Stream Encroachment and Freshwater Wetlands permit application for proposed remedial activities at the site. Activities included calculation and evaluation of flood fringe and fill volumes, development of restoration plan for disturbed wetlands, development of soil erosion and sediment control plan, and environmental impacts evaluation. Management of all construction field activities including installation of passive gas venting system and a 2-foot thick cap with geotextile to stabilize soft tar areas. Developed follow-up Remedial Action Report detailing construction and restoration activities to achieve site closure.
- Design, permitting and construction management activities for capping and excavation at a manufacturing site under the New Jersey ISRA and Solid Waste programs. Developed Remedial Action Workplan which included landfill closure, "hot-spot" excavation, installation of asphalt and soil caps, and bank stabilization. Permits included Freshwater Wetlands, Waterfront Development and Soil Erosion and Sediment Control with stormwater discharge. Construction management activities included ensuring compliance with all permits, oversight of day to day contractor operations, tracking field changes and extensive coordination with current property owner who was also performing construction at the active facility. Developed Remedial Action Report which included a Deed Notice and Classification Exception Area to achieve site closure.
- Preparation of closure plan for an industrial landfill in Morris County, New Jersey under Solid Waste

Program. Activities included determination of slope stability, stormwater runoff evaluation, water budget, and development of grading and soil erosion and sediment control plans. Closure plan was approved by the NJDEP for implementation.

- Engineering design, permitting and construction support for remediation of asphaltic product at an active manufacturing facility in central New Jersey under Site Remediation Program. Phase I excavation design included extensive utility preservation and management, structural building supports, water management and restoration with backfill and asphalt for roadways and parking areas. Phase II excavation design included wetlands permitting, water management, backfill and wetlands restoration in accordance with the permit. Final Remedial Action Reports were prepared for Phase I and Phase II. The site is currently transitioning into the Licensed Site Remediation Professional program.
- Engineering design, permitting and construction management for former lagoon/ash disposal area capping at Superfund site in southern New Jersey. Prepared grading plans, stormwater management system and alternative phytotechnology cover. Obtained equivalencies for wetlands and flood hazard area permits. Provided construction management, QA/QC activities, final reporting and O&M of cover system.
- Engineering and construction support for fast-paced remediation of PCB-impacted soils within the right-of-way of an interstate. Remedial activities were required to ensure clean working surfaces for contractors performing highway bridge expansion and lane expansion activities. Engineering and construction support activities included soil characterization, excavation design, stormwater management support, utility jacking/boring support, casing installation support and QA/QC activities for imported fill materials and compaction.
- Engineering and permitting for closure of a solid waste landfill at a manufacturing site in southern New Jersey. Remedy included limited excavation and off-site disposal, soil cap system, wetlands restoration and ecological risk assessment.
- Engineering and ecological risk support for large Brownfields redevelopment over a solid waste landfill in northern New Jersey. Support includes solid waste permitting and ecological sampling plan design.

- Engineering, permitting and ecological risk support to attain remedial closure for site in northern New Jersey. Site contains extensive waste lagoons and fill areas. Support includes remedial investigation, engineering design for waste consolidation and capping systems, extensive wetlands permitting and ecological risk assessment.
- Investigation and design to assist client with potable water needs at an active power generation facility. Activities included existing system evaluation and sampling and engineering design for a small treatment system to ensure potable water is being delivered to safety showers and eye wash stations.