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Kathleen M. Shanley
Manager – Transmission Siting
Tel: 860-728-4527

October 13, 2016

Mr. Robert Stein, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Docket No. 466: Frost Bridge to Campville 115-kV Project
Request for Approval of Independent Environmental Inspector per Decision and Order Condition No. 4

Dear Chairman Stein:

Pursuant to Condition No.4 of the Connecticut Siting Council's (Council's) Decision and Order, dated April 14, 2016, regarding the Frost Bridge to Campville 115-kV Project (Project), The Connecticut Light and Power Company, doing business as Eversource Energy (Eversource), requests the Council's approval of TRC as the independent environmental inspector for the Project facilities. As specified in Condition No. 4, the independent environmental inspector would monitor and provide a bi-weekly report to the Council regarding environmental compliance with the Project's approved Development and Management Plans. Attachments A through C include TRC's understanding of the Project, corporate qualifications, and the resumes of the environmental inspectors and key management personnel that TRC proposes to assign to the Project.

Mr. Paul Cyr will be the lead inspector from TRC, under the supervision of Mr. Ryan Bane and Mr. Colin Duncan. Mr. Cyr will be supported in the field by Mr. Liam Bane.

Should you or other Council members have any questions regarding this submission, please do not hesitate to contact me via e-mail at kathleen.shanley@eversource.com or telephone at (860) 728-4527.

Sincerely,

Kathleen M. Shanley
Manager, Transmission Siting

Enclosures

cc: Service List, with enclosures
Mr. Robert M. Scannell, Town Manager, Town of Watertown
The Honorable Edmond V. Mone, First Selectman, Town of Thomaston
The Honorable Leo Paul, Jr., First Selectman, Town of Litchfield
The Honorable Michael R. Criss, First Selectman, Town of Harwinton
The Honorable Neil O'Leary, c/o Joe Geary, City of Waterbury
The Honorable David V. Merchant, Town of Plymouth

Attachment A – Project Understanding

The Project purpose is to provide reliable energy to meet customer needs and meet national and regional reliability standards. The Project will take place entirely on Eversource property or within existing Eversource right-of-way (ROW).

Construction of the new 10.4-mile 115-kV overhead electric transmission line will first consist of establishing project limits (including vegetative clearing limits, and wetland and cultural resource boundaries), temporary contractor yards, construction field offices, and staging areas (including equipment and material staging sites, temporary storage areas, and laydown areas), followed by vegetative clearing and establishment of erosion controls. Access roads will then be improved or constructed followed by installation of work pads and finally installation of new foundations, structures, shield wires, conductors, and associated appurtenances. Temporary features will be removed as needed, areas will be restored in compliance with applicable permits and guidance documents, and erosion controls will remain until permanent stabilization has been achieved as required by the Eversource General Stormwater Permit from CT DEEP. An approximately 0.1-mile portion of the 115-kV line from the Frost Bridge Substation will consist of an underground cable system.

A 0.4-mile double-circuit (DCT) segment of two 115-kV lines (the 1191 and 1921 lines) that currently exist across the Naugatuck River at the Litchfield and Harwinton town lines are supported by common structures. These lines will be reconfigured so each line is on its own set of structures to improve system reliability. Modifications to the Frost Camp Substation will occur entirely within previously developed and existing fenced gravel areas, and modifications to the Campville Substation will require a 0.4-acre expansion of the existing developed area by extending the fence to the east by 90 feet. The eastern limit of disturbance due to the Campville Substation expansion and grading will come to within approximately 25 feet of a wetland.

Permanent wetland fill (0.034 acre) will occur at three locations in Harwinton for a structure installation, a culvert replacement and access road improvements. Approximately 2.7 acres of wetlands will be temporarily impacted for temporary access, and 6.7 acre of forested wetlands will be permanently converted to scrub-shrub. Temporary timber mats will be required in one vernal pool in Watertown and removal of vegetation will also be required in or near vernal pools. Three decoy vernal pools will be eliminated as requested by the CSC. Wetlands mitigation may or may not be included as part of the Project.

Best Management Practices (BMPs) such as culverts or timber mats will be used for access through streams and wetlands. Public roads will be kept free from track-out by installing rock aprons and sweeping. Dewatering, if required, will take place within upland areas that will not result in a discharge to wetlands or waters or disposed of at appropriate upland areas or treatment facilities via tanker truck. Contaminated soil or groundwater will be reported to Eversource and handled in accordance with applicable regulatory requirements.

Five state-listed species potentially occur within the Project area: wood turtle (*Glyptemys insculpta*), spotted turtle (*Clemmys guttata*), smooth green snake (*Liochlorophis vernalis*), Northern spring salamander (*Gyrinophilus porphyritticus*), frosted elfin (butterfly) (*Callophyrus*

irus). Species protection strategies have been developed between Eversource and CT DEEP, including a contractor awareness program.

Attachment B – Representative Project Experience

Introduction

TRC has been providing environmental inspection services for New England based utilities for nearly 20 years. Environmental inspection and compliance monitoring during construction is a core business of TRC. Not only that, we have provided these services under a variety of platforms, including as Owner's representative, as Independent or Third Party inspectors, and as construction contractor's representative. Because of this diversity, we understand the importance of, and particular sensitivities associated with the differences in the inspection role, depending on how we function on each project. During the past 20 years, there has barely been a week that has passed, without a TRC inspector walking or driving some electric transmission line, natural gas pipeline, substation, or other energy facility in order to inspect and monitor for environmental compliance.

TRC provided environmental inspection services on several recent, Eversource projects, where we supported the construction contractor PAR, including the Interstate Reliability Project in eastern CT and the Greater Springfield Reliability Project. TRC provided a variety of services for the Long Island Sound Cable Replacement project, including environmental monitoring in CT, NY and for the work within Long Island Sound. TRC performed the permitting and supported the construction of the Long Island utility replacement efforts in Boston Harbor in support of removal of the Long Island Bridge, working as part of the design team led by STV. TRC also provided environmental inspection for the Conemaugh-Seward 230kV Project in western PA, again as part of the PAR construction efforts. More than a decade ago, TRC provided the environmental inspector for the 18 mile long 345kV Transmission Reliability Project in eastern MA (NSTAR).

Much of our experience is associated with recent New England regional transmission reliability initiatives and projects including:

- New sub-transmission, 115 kV and 345 kV above- and underground installations;
- New substations and substation expansions;
- Wood pole and cross-arm replacements and refurbishments;
- Steel tower and pole modifications and foundation reconstruction; and
- Reconductoring projects.

We currently have full-time and weekly/rain event-based inspectors out on several projects for Vermont Electric Power Company (VELCO) in Vermont, and National Grid in Massachusetts, as well as for Spectra on the Algonquin Incremental Market (AIM) pipeline. While not in New England, a few years back, one of TRC's largest recent projects involved construction of 600 miles of natural gas pipeline in three states, where TRC provided 26 environmental inspectors.

In a slightly different type of project, TRC provided an Independent Observer (IO), during the four year construction period for the Greenbush Rail Improvement project south of Boston. In this position, our IO was paid for by the Massachusetts Bay Transportation Authority (MBTA), but was responsible for being the eyes and ears of all involved regulatory agencies such as the Massachusetts Department of Environmental Protection (MADEP), U.S Environmental Protection Agency (USEPA), Massachusetts Office of Coastal Zone Management (CZM),

Massachusetts Division of Marine Fisheries (MDMF), National Oceanic and Atmospheric Agency (NOAA) Fisheries, U.S. Fish and Wildlife Service (USFWS), as well as local conservation commissions in 7 municipalities. In this role, we excelled in walking the line between interactions with the construction contractor, the MBTA, and the involved agencies, often documenting minor potential non-compliance situations and the rapid and effective response of the construction contractor. TRC received extensive compliments for our effective role on this long term and highly controversial project located in some very wealthy suburbs of Boston.

Vermont Electric Power Company - Stormwater Management Southern Loop Transmission Project – Central VT

TRC was retained by Vermont Electric Power Company (VELCO) to delineate all natural resources in the project area and obtain a new facility license and all resource permits for the construction of a new 51-mile 345 kilovolt (kV) transmission line and three substations. This comprehensive permitting assignment included obtaining an individual National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Discharge Permit and the preparation of an associated Erosion Prevention and Sediment Control Plan (EPSC). In addition, TRC was retained to serve as the Environmental Inspector/Erosion Prevention and Sediment Control Specialist during construction of this transmission line project located in the steep foothills of the Green Mountains in central Vermont.

TRC conducted risk evaluation for the individual stormwater discharge permit in a myriad of challenging conditions, including steep terrain, highly erodible soils, rare, threatened, and endangered species (RTE), wetland and water resource boundaries along the project corridor. TRC assisted in the preparation of detailed construction and erosion prevention and sediment control plans in compliance with the Vermont standards and specifications for erosion prevention and sediment control, setting a standard in Vermont for transmission line construction projects. In collaboration with the VELCO engineering and environmental teams, TRC developed specific wetland and stream crossing procedures, and permanent passive stormwater controls (e.g. appropriate construction road grades and work pad plans, water bars, drainage swales, etc.) acceptable to the Vermont Agency of Natural Resources, yet practical and achievable for construction contractors.

PAR Electrical Contractors - Northeast Utilities Interstate Reliability Project – Eastern CT, Greater Springfield Reliability Project, and PPL's Conemaugh-Seward 230 kV Project – Western PA

TRC reviewed draft and final environmental permit conditions and existing construction and erosion and sediment control plans, and performed ROW "look-ahead" inspections of proposed tree clearing areas, road construction or improvements, proposed and/or necessary drainage/culvert installations, wetland and other natural resource areas, and proposed and necessary erosion and sediment controls. Developed Permit Compliance Work Plans for the various construction phases of the project and performed compliance field review of erosion and sediment controls, including consistency with permit conditions and standards, type and adequacy of materials, soil and stockpile pole locations, soil, logs/chips/debris, stabilization of slopes and laydown areas, and maintenance and emergency procedures. Also reviewed dewatering methods, materials, and disposal locations adjacent wetlands & streams. Became

familiar with archaeological/cultural and other identified resources to be avoided or mitigated, along with approved methods at road crossings, pole/foundation installations, and laydown areas and other work areas. Attended and facilitated meetings and field inspections with the client and state agency representatives.

NSTAR - 345 kV Transmission Reliability Project – Eastern MA
TRC provided Project Environmental Compliance Management for construction of three new, 18-mile 345 kV underground transmission lines and four electric substations. Tasks included development of environmental compliance training program for contractor staff, daily construction compliance monitoring, sampling and reporting of trench and site dewatering, daily monitoring of temporary erosion and sedimentation controls in compliance with SWPPP and Order of Conditions, monitoring of all restoration work and obtaining other discharge permits.

Northeast Utilities - Long Island Replacement Cable Project – Long Island Sound, CT and NY
This Project involved the replacement of the seven existing 11-mile long self-contained, fluid filled 138 kV submarine cables and the installation of three new solid dielectric 138 kV cables within the same general corridor in Long Island Sound. TRC provided Environmental Plans and Approvals, Removal and Disposal of Dielectric Fluid, and Environmental Management and Inspection during Construction.

National Grid – A-127/B-128 Reconductoring and Reinforcement Project – Northwest MA/Southern VT
National Grid replaced the conductors on the existing A-127/B-128 115kV transmission electric line that spanned 508 steel structures over 67 miles of existing ROW easement through several towns from Leicester to Rowe, Massachusetts, with its termination in Whitingham, Vermont. In addition to replacing the conductor, the project also included steel tower foundation reinforcement to approximately 60 structures and steel tower replacement of 30 structures. TRC completed wetland delineations, local, state and federal environmental wetland permitting, wetland mitigation and monitoring, and twice weekly environmental compliance construction monitoring and inspections.

National Grid - Wakefield Junction Substation Project – Northeast MA
National Grid proposed a new 345/115 kV electrical transmission substation to be interconnected to existing transmission lines situated on a 30-acre property it owns. TRC managed, implemented, and coordinated wetland and vernal pool field surveys, and obtained a local wetland permit and a NPDES Construction Stormwater Discharge Permit and the preparation of an associated Stormwater Pollution Prevention Plan (SWPPP). TRC also provided construction management services, including environmental inspections to ensure compliance with permit conditions and regulatory approvals regarding stormwater, erosion and sediment control, wetland impacts, and priority habitat conservation; and preparation of weekly monitoring reports. In addition, TRC provided oversight of wetland and vernal pool replication and site restoration activities.

VELCO - NRP Transmission Compliance Project – Central and Northern VT
TRC provided environmental permit compliance and training services for a new 27-mile-long 115 kV transmission line from New Haven to South Burlington and 43-mile long 345 kV transmission line from West Rutland to New Haven. Developed a federal, state, and local environmental permit binder and training program covering the Section 248 Certificate and environmental permit conditions and requirements. Developed environmental compliance procedures and final plans, evaluated construction methods and recommended appropriate best management practices and new off- ROW access during project construction with respect to sensitive environmental and archeological resources. Coordinated VT Public service Board (PSB) third party inspections and prepared weekly compliance reports for submittal to regulatory agencies. TRC also performed post-construction RTE and wetland mitigation area monitoring.

National Grid - Spier-Rotterdam 1 & 2 Reconductoring Project – Upstate NY
This Project was a 7.2–mile 115 kV transmission line reconductoring project. TRC conducted environmental assessments, obtained a NPDES Construction Stormwater Discharge Permit and the preparation of an associated SWPPP, and provided an Environmental Monitor to ensure compliance with the SWPPP during construction.

National Grid - E205E 230kV Replacement Project
TRC conducted comprehensive permitting services for this 62-mile refurbishment project. TRC prepared and submitted all applicable local and state wetland permits and maintenance notifications. TRC conducted the Environmental Monitoring for this two-year construction project under the Alliance Delivery construction contract.

National Grid - 34 kV Ward Hill Substation Expansion – Northeast MA
This New England Management Area (NEMA) load and reliability project involving a large 345 kV gas insulated system (GIS) substation expansion. TRC provided environmental siting and written testimony support for DTE petition. Permitting involved wetland and vernal pool protection mitigation, Riverfront area, storm water management, a NOI and SWPPP under the NPDES Storm Water General Permit for Construction activity, and SWPPP environmental inspections**.**

National Grid - M-13/N-12/L-14/ 115 kV Transmission Line Replacement Project – Southeast MA
This 10-mile linear project is located almost entirely within a public water supply watershed, with several H-frame structures located with a few feet from the reservoir. This project required state and federal wetland permits, as well as Tribal Historic Preservation Office (THPO), State Historic Preservation Office (SHPO) and Threatened and Endangered Species Act reviews. TRC managed the entire permitting effort and performed the environmental compliance inspections for this project.

VELCO - Southern Loop 345 kV Transmission Project – Central VT
TRC provided comprehensive Section 248 licensing and permitting for this new 51-mile 345 kV project in central Vermont. TRC also supported the preparation and coordination of all environmental permits required for the project. Subsequent to the permitting process, TRC developed and implemented a comprehensive environmental training and compliance plan. TRC

provided two full-time environmental compliance monitors during the construction and also provided vernal pool monitoring to assess biological productivity of pools in the ROW and the off-site mitigation area.

VELCO - Mosher Tap 115 kV Transmission and Compliance Project – Northern VT
TRC provided environmental permit compliance and training plans, and field construction monitoring for this transmission voltage upgrade project between VELCO's existing Irasburg Substation and Mosher Tap. Assisted VELCO in amending the project Wetlands Permit and EPSCP, obtaining acceptance from the VT Vermont Agency of Natural Resources (VT ANR). Assisted the Contractor in "look ahead" walkovers to identify appropriate swamp mat placement, erosion controls, and mitigation. Provided environmental status and inspection reports submitted to the VT PSB and ANR.

National Grid - Tewksbury-So. Broadway 115 kV Transmission Expansion to Existing ROW – Northeast MA
TRC provided technical environmental support for DTE/EFSB petition, Massachusetts Environmental Policy Act (MEPA) Draft Environmental Impact Report (DEIR) analyses and submitted the subsequent Single Environmental Impact Report (SEIR) submitted. The SEIR focused on wetland issues concerning: wetland ecosystem conversion; herbicide and pesticide use in sensitive areas; access road construction techniques to reduce sedimentation potential and wetland alterations; wetland functional and impact assessments; and, wetland mitigation. TRC conducted environmental inspections during construction.

National Grid - 23 kV/69kV Transmission Conversion Project – Central MA
TRC prepared an Expanded Environmental Notification Form (ENF) and Environmental Impact Assessment, and prepared Watershed Protection Act and Wetland Protection Act applications. Negotiated specific mitigation plans with the Massachusetts Water Resources Authority (MWRA) to ensure compliance with water quality protection provisions of the Watershed Protection Act regulations. TRC staff provided written and oral testimony for all project environmental considerations including site selection alternatives and rating analysis, and local EFSB and Belchertown Conservation Commission; and conducted environmental inspections during construction.

National Grid - W149 115 kV Line Replacement Project – Central VT
TRC provided wetland consulting services for a 41-mile 115kV transmission refurbishment project traversing between Bellows Falls VT Substation and the Wilder Hydroelectric Generating Station in Hartford, VT. Conducted wetland delineations, threatened and endangered species consultations, and cultural resource consultations required for the wetland Standard Dredge & Fill Permit application process. Also conducted and managed the environmental inspections for this year-long construction project and provided consultations on wetland protection, restoration, and post-construction monitoring.

Attachment C - Resumes

PAUL R. CYR

EDUCATION
A.S., Environmental Science, Middlesex Community College, 2008

AREAS OF EXPERTISE
Mr. Paul Cyr has over nine years of experience encompassing:

- Construction Oversight
- Engineered Control-Construction Oversight
- Environmental Ground Water & Soil Sampling Events
- Environmental Site Assessments
- Field/Remedial Investigations
- Hazardous Waste Management

REPRESENTATIVE EXPERIENCE
Mr. Cyr is a Project Scientist who participates in construction projects, landfill closure projects, Phase I, Phase II, and Phase field investigations and remediation activities including environmental sampling events. Mr. Cyr participates in all facets of data review and project reporting. Mr. Cyr has performed in a lead capacity for construction oversight on numerous large scale environmental and construction improvement projects in CT, NY, and NJ including off-shore (marine activities). Mr. Cyr has experience with various types of field instruments and tools of the trade including but not limited to PIDs, FIDs, peristaltic pumps, submersible pumps, trash pumps, multi-parameter with flow cell systems, water quality instruments, calibration systems, oil/water level probes and meters, GPS units, metal detectors, soil compactors, compressors, hammer drills, and generators.

Nexans Norway AS, Long Island Replacement Cable Project – Northport, New York and Norwalk, Connecticut (Project Environmental Inspector and Project Spill Coordinator)
Mr. Cyr served as the project's Lead Environmental Inspector for onshore and offshore construction activities as well as the Spill Prevention Coordinator. Onshore construction activities included overseeing subcontractors building new substation structures (subsurface and overhead) in Norwalk, CT and Northport, Long Island, and overseeing the installation of three "New Technology" subsurface cables (11 miles each) extending from the Norwalk, CT power plant across Long Island Sound to the Northport power plant. Marine construction oversight included staying aboard the cable-laying vessel M/V Siem Danis as well as crew dive boats during the underwater portion of the near shore and deepwater installation of the three new solid dielectric cables between Norwalk, Connecticut and Northport, Long Island.

For spill prevention and/or reporting, Mr. Cyr conducted frequent tours of the vessel and its subsurface equipment (subsurface cable burial equipment-CAPJETs). Onshore inspections encompassed work areas in previous areas of concern and/or potential areas where activities could cause a release. Other duties include inspecting environmental controls relative to the Spill Prevention and Control Plan and erosion and sedimentation controls as well as miscellaneous environmental

issues that arise during the course of field activities.

Mr. Cyr was tasked with enforcing the many permits (NY DEP, NY Wildlife Fish & Game, NYDEC, NY DOT, US Coast Guard, etc.) as well as the Environmental Management and Construction Plan (EM&CP) in accordance with the New York State Public Service Commission, and the Development and Management Plan (D&M Plan) in accordance with the Connecticut Siting Council, for the removal of seven fluid-filled 138 kV cables and the installation of three new solid non-dielectric filled cables between Norwalk, Connecticut and Northport, Long Island. TRC's scope of work also included the removal and disposal of the dielectric fluid from the existing cable system and environmental inspection services during cable removal and installation. Final burial of the three new cables was completed in September 2008.

Bond Brothers Inc., Northeast Utilities, 345 Kv Buried Transmission Line – Middletown/Norwalk, CT (Field Scientist)
Mr. Cyr provided oversight and management of the handling of the soil being generated as a result of the installation of the buried transmission lines. His responsibilities included directing the off-site storage of the soils removed based on pre-characterization or redirecting the soils based on field observations, tracking the soils as they are transported, stored and disposed of when necessary.

Connecticut Department of Transportation (ConnDOT) Environmental Compliance (Lead Environmental Inspector)
Mr Cyr provided full time environmental inspection for the excavation, treatment, and off-site disposal of the pre-defined areas of Raymark Waste (EPA designated Areas) as a part of the Sikorsky Memorial Airport/Route 113 relocation project.

City of Stamford Scofieldtown Landfill Closure Project, - Stamford, CT (Lead Construction Inspector)
Mr. Cyr provided environmental oversight for the construction of an Engineered Control on the approximate 18 acre site. Mr. Cyr provided full time inspection throughout the construction phase where a geosynthetic/geomembrane liner system was placed over the designated area per the TRC designed Landfill Closure Plan. Mr. Cyr worked with additional TRC Staff to review contractor submittals and complete all required reporting provided to the client and state agencies.

SPX - OZ Gedney, – Terryville, CT (Lead Construction Inspector)
Mr. Cyr provided environmental oversight for the construction of an Engineered Control in the Former Scrap Metal Area of the site. Mr. Cyr provided full time inspection throughout the construction phase where a geosynthetic/geomembrane liner system was placed over the designated area per the TRC designed Engineer Control Plan. Mr. Cyr worked with additional TRC Staff to review contractor submittals and complete all required reporting provided to the client and state agencies.

Connecticut Department of Transportation (ConnDOT), Multiple Tasks – Connecticut (Lead Field Scientist, Field Team Support, and/or Technical Support)
Mr. Cyr has performed and assisted with numerous ConnDOT tasks including stormwater runoff monitoring and stormwater collections, Corridor Land Use Evaluations, construction oversight involving corridor improvements, bridge replacements, intersection and/or roadway improvements, as well as investigations involving site inspections, field investigations, municipal, state and federal researches for the purpose of emanate domain and subsequent report preparations.

Connecticut Resources Recovery Authority, South Meadows Substation, 115 Kv Switchyard – Hartford, CT (Field team Leader/Project Environmental Scientist, and/or Field Support)
Mr. Cyr performed and assisted in several field investigations to assess and delineate areas of known and/or suspect soil impacts (PCBs, petroleum, and/or metals). Mr. Cyr currently performs or assists in ongoing remedial activities within the Switchyards and other portions of the site as well as ground water monitoring programs. Mr. Cyr provided construction oversight during stormwater sewer line installations within a soil remediation area with known and unknown hazards of buried high voltage (115 kV and 23 kV) lines, ductile banks, conduits and exposed cables in addition to natural gas lines as well as overhead power lines.

Connecticut Department of Transportation Right-of Way, Q-Bridge, Fitch Foundry, Yale Boat House, and the Grand Ave. Bridge, Field Investigations – New Haven, CT (Field Team Support, and/or Technical Support)
Mr. Cyr supported field investigations for the Q-Bridge Area Interstate 95 improvements. Responsibilities included environmental oversight of subcontractor operations, the management of soil transfers to onsite and offsite disposal locations and the occasional collection of soil from the Waste Stockpile Area for lab analysis. Mr. Cyr provided field notes and sketches for the purpose of reporting.

SPECIALIZED TRAINING COURSES

- Forty-Hour OSHA Health and Safety Training, 12/2004
- OSHA 8 hour Health and Safety Refresher Training, 2015
- Adult/Child AED, 2014
- Adult First Aid, 2014
- NE Utilities – Substation Safety Awareness Training, 06/2010
- Covanta – Substation Safety Awareness Training, 06/2010
- Storm Water Pollution Prevention Training, 02/2010
- Cold Stress Awareness Training, 01/2009
- Defensive Driving Fundamentals, 06/2009
- Construction Safety Orientation Course, 01/2008
- Electrical Safety Awareness Course, 01/2008
- Trenching and Excavation Safety Course, 01/2008
- Storm Water Pollution Awareness Training, 4/2008

LIAM S. BANE

EDUCATION
B.S., Environmental Earth Science, Eastern Connecticut State University, 1996

TECHNICAL SPECIALTIES
Mr. Liam S. Bane has 19 years of experience encompassing:

- Project Management
- Underground/Aboveground Storage Tank System Design/Investigation
- Construction Oversight
- Remediation System Operation/Installation
- Environmental Sampling and Field Investigation/Site Remediation
- Hazardous Waste Management
- Spill Response

REPRESENTATIVE EXPERIENCE
Mr. Bane is a Project Manager in TRC's Remediation Practice. He has a total of 19 years of experience working in the environmental profession. His qualifications include extensive field investigation and remediation and construction project management. He currently works for such clients as the Connecticut Department of Transportation (ConnDOT), Materials Innovations and Recycling Authority (MIRA, formerly known as CRRA), and the Town of Manchester.

Construction Oversight

ConnDOT– Various Sites and Projects, CT (Project Manager)
Mr. Bane is currently providing Project Manager services for the current on–call Soil and Ground Water Contract with ConnDOT. He provides cost estimates, contractor document review, permit reviews, waste profiling, contractor and construction oversight and documenting daily activities. Mr. Bane has overseen various site improvement projects at the New Haven Rail Yard.

Bond Brothers Inc., Northeast Utilities, 345 Kv Buried Transmission Line – Middletown/Norwalk, CT (Project Manager/Lead Field Consultant)
Mr. Bane provided management and oversight of the handling of the soil and ground water being generated as a result of the installation of the buried transmission lines. His responsibilities included management of field staff and assisted in the development of Soil and Groundwater Management Plans, Discharge Permits, directing the off-site storage of the soils removed based on pre-characterization or redirecting the soils based on field observations, tracking the soils as they were transported, stored and disposed of when necessary. Mr. Bane was also responsible for the ground water management as it is was generated and discharged, maintaining compliance to state permits and the local authorities. Other duties include inspecting environmental controls relative to spill prevention and control plan and erosion and sedimentation controls as well as miscellaneous environmental issues that arose during the course of field activities.

National Grid Co. (Niagara Mohawk), Former Manufactured Gas Plant – Malone, NY (Site Supervisor)
Mr. Bane was the site supervisor overseeing the implementation of the engineered site controls to reduce the potential of environmental impacts from the site to the surrounding properties and major water course that abuts the property. The project included the demolition of structures adjacent to a river, installation of an access road dissecting the property, the construction of an engineered retaining wall to support a large land cut, and adjusting the grade to redirect sheet flow from rain events and additional site improvements to prevent erosion.

SPX Corporation, O-Z Gedney, Remedial Action Plan – Terryville, CT (Site Supervisor)
Mr. Bane provided oversight and management of the implementation of the Remedial Action Plan (RAP) which included such activities as health and safety, establishing environmental controls, directing excavations, managing soil disposal, sampling, grading, and general site activities. Excavation activities included the removal and disposal of 12,000 tons of hazardous soil and 32,000 tons of non-hazardous soil.

Bridgeport Economic Development Corporation (BEDCO), Former Industrial Facilities, Remedial Action Selection/Remediation – Bridgeport, CT (Site Supervisor)
Mr. Bane assisted in the preparation of remedial action work plans for the site. Remediation activities included selection of preferred remedial alternatives, preparation of remedial action work plans and specifications, securing permits necessary to perform the work, and implementation of remedial action plans. He provided oversight and management of implementing the Remedial Action Plan (RAP) which included activities such as health and safety, establishing environmental controls, directing excavations, managing soil disposal, sampling, grading, and general site activities.

SPX Corporation, O-Z Gedney Facility, Remediation Oversight/Field Investigation – Terryville, CT (Team Leader/Project Scientist)
Mr. Bane has provided contractor oversight and directed site activities during several phases of remediation associated with fulfilling the requirements under the Connecticut Transfer Act for this former manufacturing facility. Additional responsibilities included soil borings and monitoring well installation and development, and soil, surface water and ground water sampling and screening. Soil screening was conducted using a Niton instrument which utilizes X-ray fluorescence to determine the concentrations of various inorganics in multiple types of media. He assisted with the remediation contractor selection process.

Williams Communication, Inc., Field Investigation – MA (Project Scientist)
Mr. Bane provided consulting services during various phases of the installation of a fiber optic network throughout the Northeast. Services provided included field

screening of soils, oversight of drill rig operations and the development of a Utility Related Abatement Measures (URAM) Summary Report for the State of Massachusetts.

Pennsylvania Power & Light Global, Field Investigation – Wallingford, CT (Project Scientist)
Mr. Bane provided environmental consulting services during a geotechnical site investigation. Services included sample collection, field screening of soils collected and oversight of the drill rig placement.

FAA Technical Center, Field Investigation – Atlantic City, NJ (Team Leader/Project Scientist)
Mr. Bane worked as the site team leader during multiple tasks of the Supplemental Remedial Investigation/Environmental Risk Assessment. Tasks included setting up erosion controls, geophysical investigation, mercury hot spot delineation and ground water sampling. He also assisted in the collection of sediment cores for radionuclide dating and a stream morphology study of the South Branch Absecon Creek. Additional tasks included the modification of interstitial water sampling techniques to the specific needs of the investigation and developed an expedient method for performing a stream morphology study of the South Branch Absecon Creek.

Previous work performed at the site included assistance in an extensive mercury study Remedial Investigation/Environmental Risk Assessment, which included the collection of multiple soil samples over a vast area. Mr. Bane assisted in an Ecological Risk Assessment, which included the collection of selected invertebrate and fish species. He setup and installed a telemetry system which monitors conditions within a body of water. He also assisted in operations of two major pump tests that extended over a period of several days. Mr. Bane participates in quarterly ground water sampling, developed ground water contour maps and chemical isopleth contour maps, prepared data summary tables and assisted in preparation of quarterly ground water report.

SPECIALIZED TRAINING/CERTIFICATION

- Certified Hazardous Materials Manager (CHMM) No. 16162
- OSHA 40-Hour HAZWOPER, February 1997
- OSHA 8-Hour Refresher, January 2016
- OSHA 8-Hour Site Supervisor February 2000
- Confined Space Entry, January 1999
- DOT Shippers Training, August 2015
- Hazardous Materials Regulations Training, December 1999
- Niton Spectrum Analyzer Certified, June 5, 2000

RYAN HALE, PWS

EDUCATION
B.S., Environmental Studies – Biological Sciences, SUNY College of Environmental Science and Forestry, Syracuse, NY, 2003

PROFESSIONAL REGISTRATIONS
Professional Wetland Scientist (PWS # 2141), 2011

AREAS OF EXPERTISE
Mr. Ryan Hale, PWS has technical experience in the following areas:

- Wetlands and Watercourses
  - Delineation and Assessment
  - Mitigation Monitoring
- Federal, State, and Local Environmental Permitting
  - Linear Utilities
  - Highway, Railway, Bridge, and Port
- Construction Environmental Management and Compliance
  - Environmental Compliance Site Inspections and Reporting
  - Erosion and Sediment Control Methods and Implementation

REPRESENTATIVE EXPERIENCE
Mr. Hale is a Professional Wetland Scientist (PWS) with 11 years of environmental consulting experience primarily managing projects and performing field work and permitting for utility projects including large-scale solar development, overhead and underground electric infrastructure, and natural gas pipeline and aboveground facilities. Mr. Hale has extensive experience coordinating project staff, budgets, and schedules to complete site evaluations and obtain permits required to meet client and regulatory deadlines, as well as provide construction and operation oversight as needed. Mr. Hale also performs wetland and stream delineation, functional assessment, mitigation, and monitoring; threatened and endangered species field surveys and habitat mitigation; and construction site erosion, sediment control, and water quality inspections. He has extensive experience assessing, documenting, and communicating environmental site conditions particularly with respect to wetlands, waters, habitat, soil erosion, and the potential for adverse environmental conditions due to existing or past site uses.

National Grid – A127/B128 Line Reconductoring and Refurbishment Project Environmental Permitting and Erosion and Sediment Control Inspection Report Reviews – MA, VT (Project Manager/Staff Scientist)
Managed several permit amendments and closeouts and assumed overall project management responsibilities. Reviewed and edited weekly erosion and sediment control inspection reports for an overhead electric utility reconductoring and refurbishment project that spans 67 miles through several towns in northwestern MA and southern VT. Assumed erosion and sediment control inspection responsibilities following departure of previous environmental inspector. Updated the USACE Swamp Mat Individual Permit and prepared a Request for an Amended Order of Conditions for wetland impacts associated with the replacement of and access to structure 161A. Attended three public

hearings to present design modifications and present proposed wetland mitigation. Prepared a wetland mitigation plan and monitored two wetland mitigation areas for two years post-construction to assess success.

National Grid – S-9 115 kV Transmission Line Reconductoring – Abington, Rockland, and Hanover, MA (Wetland Scientist/Erosion and Sediment Control Compliance Inspector)
Managed TESC inspections along a 2.9-mile transmission line reconductoring project that involved replacement of electric conductors and wood pole structures with steel pole structures along the existing ROW. Installation of temporary "swamp mats" were required in wetlands and over streams so heavy equipment could access work areas while minimizing impacts. Inspections included review of Best Management Practices (BMPs) and stockpile areas relative to regulated resources, and documentation of swamp mat placement and removal.

Spectra – E-1 Pipeline Anomaly Dig Environmental Inspection – Waterford and Montville, CT (Environmental Inspector)
Managed inspection of construction operations at an anomaly dig site in Montville in response to questions regarding dewatering procedures near a wetland and stream. Instructed crews on proper dewatering procedures and wetland/stream impact avoidance and minimization. Inspected two completed anomaly dig sites in Montville and Waterford with regard to post-construction soil erosion and sediment control compliance.

Spectra – B-1/B-1L Pipeline Replacement and Equipment Installation – Naugatuck and Waterbury, CT (Wetland Scientist/Erosion and Sediment Control Compliance Inspector)
Managed a Temporary Erosion and Sediment Control (TESC) inspection at the active pull-port facility installation site, pipeline replacement, and associated stockpile area in Waterbury, and the completed and temporarily stabilized pipeline replacement site in Naugatuck. No issues related to erosion and sediment control were observed in Waterbury, but the Naugatuck site experienced significant erosion due to an upgradient culvert that flowed onto the site during a heavy rain event. Silt fence was observed to have contained eroded soils within the site, but no discharges were observed to adjacent Hop Brook. Recommended silt fence repairs and re-stabilizing exposed soils, as well as long term measures to prevent future soil erosion due to periodic flows from the culvert during heavy rain events.

CSX Transportation – Boston Line Clearance Improvement Project Wetlands and Erosion Control Compliance – Albany, NY to Boston, MA (Wetland Scientist/Erosion and Sediment Control Compliance Inspector)
Delineated 3.7 acres of wetlands and 5,100 linear feet of the OHWM of streams along portions of the CSX railroad track proposed to be lowered under several bridges to accommodate the height of double-stacked trains from Albany to Boston. Prepared permit applications pursuant to the WPA for proposed impacts to the buffers of regulated wetlands and water bodies at five track lowering sites in Charlton, Springfield, Warren, and Worcester, MA. Performed monthly audits of National Pollutant Discharge Elimination System (NPDES) erosion and sediment control compliance at eight track lowering sites in East Chatham, NY, and Brookfield, Charlton, Pittsfield, Russell, Springfield, and Warren, MA. Worked with site contractors to determine appropriate erosion and sediment controls and schedule their implementation to ensure NPDES compliance.

Hatch Mott MacDonald/Borough of Hopatcong – Hopatcong Sanitary Sewer System Erosion Control Compliance, and Wetland and Upland Restoration – Hopatcong Borough, NJ (Erosion and Sediment Control Lead)
Performed bi-weekly TESC inspections and reporting at sanitary sewer installation sites throughout the Borough of Hopatcong. Construction activities included installation of sanitary sewer lines and pump stations proximate to streams, wetlands, and storm drains that flow to Lake Hopatcong, the largest freshwater lake in New Jersey and headwaters of its outlet, the Musconetcong River, designated as a "Wild and Scenic River." Supervised replanting of wetlands and uplands following sanitary sewer line installation, including species selection and location, and recommendations for installation and care. The project allowed for abandonment of individual septic systems along 4.3 miles of the Lake Hopatcong shoreline and 1.9 square miles of the most densely populated part of the Borough, with more than 7,000 residents and 2,740 homes, businesses, and public facilities now connected to sanitary sewers.

Kiewit Corporation – Interstate 405 NE 195th Street to SR 527 Northbound Auxiliary Lane Project Erosion Control Compliance – Bothell, WA (Certified Erosion and Sediment Control Lead/Wetland Scientist)
Lead CESCL responsible for daily Temporary Erosion and Sediment Control (TESC) inspections and water quality monitoring along a 1.8-mile lane addition to I-405. Prepared daily inspection reports and acted as liaison between Kiewit (client) and WSDOT. Reviewed previously delineated wetlands and OHWM delineations within the project area to confirm boundaries prior to construction. Assisted in preparing the proposal for the work. The project won the Associated General Contractors 2011 Environmental Excellence in Construction Management Award.

Williams Partners, L.P. – Gulfstream Natural Gas Pipeline Wetland Monitoring, and Gopher Tortoise Habitat Assessment and Relocation – South Florida and the Gulf Coast of Mississippi and Alabama (Environmental Technician)
Monitored the recovery status of over 100 wetlands following construction of the Gulfstream natural gas pipeline, which included analysis and documentation of invasive species, hydrology, and overall recovery status. Identified state species of special concern gopher tortoise habitat at proposed pipeline construction areas, which included field surveys to identify and locate gopher tortoise burrows within the construction area, supervising the excavation of the tortoises from their burrows, collecting biometric data on excavated tortoises, and relocating them to adjacent suitable habitat.

COLIN P. DUNCAN, CPSS, PWS

EDUCATION

M.S., Natural Resources Science, University of Rhode Island, 1991
B.S., Plant and Soil Science, University of Massachusetts - Amherst, 1986

PROFESSIONAL REGISTRATIONS

Certified Professional Soil Scientist (CPSS), (# 3344), 1991
Professional Wetland Scientist (PWS), (# 1412), 2003
Professional Soil Scientist, Society of Soil Scientists of Southern New England, 1990

AREAS OF EXPERTISE

Mr. Colin P. Duncan, CPSS, PWS has project and program management and technical experience in the following areas:

- Federal, State and Local Environmental Permitting
- NEPA and State Environmental Policy Act Environmental Impact Studies
- Wetland and Ecological Community Surveys
- Electrical and Gas Utility Siting and Permitting
- Wind, Solar and Fossil Energy Generation Siting and Permitting
- Threatened and Endangered Species Surveys
- Wetland and Watercourse Impact Mitigation Plans
- Construction Environmental Management and Compliance
- Highway, Railway and Bridge Permitting

REPRESENTATIVE EXPERIENCE

Mr. Duncan is a Certified Professional Soil Scientist and Project Manager with 30 years of experience in project management, environmental impact assessment, complex permitting, wetland and hydric soil mapping and delineation, linear utility routing studies, and wetland and wildlife habitat mitigation design. As a Project Manager, Mr. Duncan has managed and participated in hundreds of multi-phased permitting projects involving multiple team members and subcontractors from disciplines such as ecology, engineering, surveying, archaeology, geology, hazardous waste assessment, marine, wildlife and plant ecology, rare species, air quality and noise measurements and mitigation. Mr. Duncan has conducted wetland delineations and review projects throughout New England, as well as the eastern and southern states. He is also experienced in soil characterization and mapping, wetland function and value assessment, stormwater assessment and permitting, watershed studies, development feasibility, and impact assessment. For USEPA Superfund sites and other hazardous waste sites, he has performed wetland delineations, ecological and resource area assessments, and site-wide restoration design. He has for worked for numerous clients, including: municipal and private utilities, commercial and residential developers, wind and solar farm developers, transportation authorities, independent power plant developers, airports, industrial facilities, engineering firms, financial institutions, law firms, golf courses, state resource agencies and local Conservation Commissions.

Mr. Duncan’s representative projects are presented below.

Linear Siting and Transmission Projects

National Grid USA – Hampden County Reliability Project – Palmer, Monson and Hampden, MA (Project Manager: 2009 – 2016)
Mr. Duncan is TRC's Project Manager, providing environmental permitting and Energy Facilities Siting Board licensing services for National Grid's Hampden County Reliability Project which entails the conversion of 10 miles of an existing 69 kilivolt (kV) electric transmission line with a 115 kV line, and the construction of a new substation in Hampden Massachusetts. Mr. Duncan conducted and managed resource area assessments such as state and federal wetland delineations, rare species surveys, habitat assessment and multi-season radio telemetry on reptile species, historical/cultural/ archaeological resources surveys (including Native American ceremonial landscape features), visual resource assessments and structure simulations, and current land use assessments. For this project Mr. Duncan has also developed permitting strategies and route alternatives for permitting and licensing requirements including Massachusetts Wetlands Protection Act Notices of Intent in three communities, US Army Corps Massachusetts General Permit, MassDEP 401 Water Quality Certification, MEPA ENF and Draft and Final Environmental Impact Reports, a Conservation & Management Permit under the MA Endangered Species Act, and others. Working with National Grid's legal counsel, he prepared filings and provided expert testimony for project licensing under the MA Department of Public Utilities Energy Facility Siting Board. Project construction was completed in 2015 and monitoring of mitigation areas is currently on-going.

NSTAR Electric – Chelsea River Conduit Replacement Project - Chelsea and East Boston, MA (Permitting Specialist/Assistant Project Manager: 2006-2012)
Mr. Duncan was Permitting Specialist and Assistant Project Manager for NSTAR's electrical conduit replacement and expansion project across the Chelsea River in Chelsea and East Boston, MA. The project involved use of Horizontal Direction Drill (HDD) methodology to drill three parallel, 36 inch borings conduits beneath the Chelsea River. The project was required to replace NSTAR's electrical conduits that had been damaged during past channel dredging operations, and provide expanded electrical transmission capacity. Mr. Duncan coordinated aspects of project electrical and HDD route design, provided oversight on the assessment and removal of hazardous waste in the work zone, and led wetland and waterways permitting efforts, including selection of conduit crossing locations and construction methodology options, land and marine surveys, federal, state and local permitting requirements, coordination with agencies, and analysis of construction design feasibility. The project was successfully completed and energized in December of 2011.

Bond Brothers, Inc. – NSTAR Electric 345 kV Transmission Reliability Project - Boston, Milton, Canton and Stoughton, MA (Project Environmental Compliance Manager: 2005-2007)
Mr. Duncan served as the Project Environmental Compliance Manager and TRC's Project Manager for the construction of NSTAR's three new, 18-mile 345 kV underground transmission lines and four electric substations for the Transmission Reliability Project. The $250+ Million project encompassed four Massachusetts communities: Boston, Milton, Canton, and Stoughton. Mr. Duncan's responsibilities during construction included the development and presentation of an environmental compliance training program for contractor staff, daily monitoring of construction to identify any areas of environmental non-compliance, identification of soil erosion and stabilization needs in all areas in compliance with SWPPP and Conservation Commission Order of Conditions, sampling and

verification of trench and site dewatering, reporting of dewatering effluent analysis to EPA, daily monitoring of temporary erosion and sedimentation controls, and monitoring of all restoration work as necessary. Mr. Duncan also prepared additional construction permits, including the construction Spill Prevention Control and Countermeasure Plan (SPCC), the NPDES Stormwater Pollution Prevention Plan, the EPA Exclusion Letter for dewatering, as well as a temporary discharge permit from the MWRA and the Boston Water and Sewer Commission. The project was completed and energized in 2006.

NSTAR Electric – West Bay Channel/Bridge Street 25 kV Line Crossing – Osterville, MA (Project Manager: 2007-2008)
Mr. Duncan was Project Manager responsible for Environmental Permitting of NSTAR's installation of two new 25 kV electric supply lines to the Grand Island section of Osterville (Barnstable), Massachusetts. These lines replaced two existing lines that were laid across the channel bottom in 1947. The installation occurred beneath the channel connecting North Bay and West Bay using horizontal directional drill (HDD) technology. Mr. Duncan prepared permit applications including a Notice of Intent for the Barnstable Conservation Commission, a Chapter 91 License minor modification from MassDEP, a US Army Corps Programmatic General Permit under both Sections 10 and 404, and a "no adverse impact" notification from the Massachusetts Natural Heritage & Endangered Species Program.

Northeast Utilities/CL&P, New Westport Substation Project – New Creek Road, Westport, CT (Task Manager: 2007)
Mr. Duncan performed a wetland/hydric soil delineation at two alternate Westport Substation sites proposed by NU/CL&P in Westport, CT. He also conducted a wetland regulatory analysis for the construction of the substation, including permitting requirements and constraints, watercourse mapping, and a siting and visual screening assessment.

Connecticut Light & Power/Northeast Utilities – Plumtree to Triangle Substation Transmission Line Upgrade Project, Danbury & Bethel, CT (Task Manager: 2006-2007)
Mr. Duncan conducted wetland delineations and mapping for a 6-mile transmission line upgrade project in Bethel and Danbury, CT. The project involved replacement of transmission towers, conductors and shieldwire through multiple freshwater wetland areas, and crossed the Still River. Mr. Duncan also coordinated the investigation and survey of listed habitat for a state and federally endangered species within the right-of-way.

PROFESSIONAL AFFILIATIONS

- American Registry of Certified Professionals in Agronomy, Crops and Soils
- Association of Massachusetts Wetland Scientists
- Society of Soil Scientists of Southern New England (Membership Committee; 1994 Riparian Buffer Zone Conference Co-Chairman)
- Society of Wetland Scientists

SPECIALIZED TRAINING

- 40-hour OSHA Hazardous Materials Health and Safety Training