

Job Title:

President
Water & Wastewater Engineer

Engineering Experience: 16 yrs

Professional Registrations:

NYS P.E. 081526

Education:

MSEE/1994/Water Resources
Engineering; University of North
Carolina-Chapel Hill

BS/1992/Civil Engineering &
Minor in Chemistry; SUNY
Buffalo; Cum Laude

Employment History:

Apr. 2015 – Present:
L2 Engineering D.P.C,
President/CEO

Dec. 2014 – Apr. 2015: AECOM,
Senior Project Engineer

Aug. 2012 – Dec. 2014: O'Brien
& Gere, Senior Engineer

Dec. 2004 – Aug. 2012: CRA
(now GHD), Process Engineer

Feb. 1995 – Dec. 2004: URS,
Engineer

Professional Affiliations:

NY Water Environment
Association

Water Environment Federation

Past Chair Environmental
Affairs Committee –
Erie/Niagara Chapter of NYSSPE

Specialized Training:

Confined Space Entry

Ms. Lehnen has 16 years of wastewater engineering experience across Western and Central New York State. In 2015, she formed her own company, L2 Engineering D.P.C. (L2), a New York State certified woman business enterprise (WBE), to support municipalities, industries and prime consultants with their wastewater engineering needs. Her personal goal is to provide quality, technical engineering services that are valued by managers, operators and regulators.

Ms. Lehnen conducts technical evaluations, develops engineering reports and produces designs that are practical, feasible and responsive to clients. Over the years she has developed a broad range of technical engineering skills. However, due to her ability to conceive and develop innovative solutions as well as manage and address the fine details, she is in demand as a wastewater treatment plant process evaluation specialist.

She is capable of meeting tight deadlines and provides leadership by directing large-scale, complex projects. She is actively involved in professional societies and routinely presents her projects at conferences and seminars across the state. She also shares her technical expertise by conducting WWTP operator and engineer professional development hour training sessions.

Specialty engineering skills she possesses include:

- WWTP process evaluations, pre-design, designs and life-cycle cost estimates for headworks, primary settling, secondary treatment, advanced tertiary treatment, and disinfection processes
- Nutrient removal including nitrification and ultra-low phosphorus
- Pumping systems and hydraulic profile analyses
- Sewer system evaluation surveys (SSESs) and wet weather analyses
- Co-digestion, anaerobic digestion and sludge handling
- Feasibility studies
- Industrial wastewater
- Potable water treatment facilities, supply and storage
- Permit reviews and compliance
- Environmental works including pollutant minimization plans and stormwater systems
- Construction inspection

Representative Projects – As president of L2 Engineering D.P.C.

Vernon WWTP Process Evaluation – Basis of Design – Vernon, NY (2016) Sub-consultant to Dodson & Associate. Conducted hydraulic and process evaluation basis of design of existing 0.85 million gallons per day (mgd) activated sludge & nitrification facility. Established design influent characteristics using basic statistical analyses and evaluated capacity of the existing system to meet projected demands. Through calculation, established that the existing, undersized equalization basin provided no benefit to treatment and recommended removal from service. Reconfigured the secondary treatment aeration zones to reduce the potential for filamentous overgrowth by balancing sizing of the MLSS treatment zone with food to microorganism ratios (F/M) and sludge age using an iterative process. Sized aeration system to meet nitrification demands under normal, winter/low load, and emergency conditions. Developed operational plan, process flow diagrams. Estimated sludge production and sized WAS/RAS pumps.

Town of Cheektowaga Rainfall Derived Infiltration & Inflow (RDII) Analysis Assistance, Cheektowaga, NY (2016) Sub-consultant to Nussbaumer & Clarke. Currently assisting with this Sanitary Sewer Over (SSO) reduction program by aiding in the preparation of study results including comparing the effectiveness of RDII removal and rehabilitation efforts.

Confidential Manufacturing Client, NY (2016) – Currently preparing the Preliminary Engineering Report to address removal of industrial organic contaminants due to SPDES permit modifications.

North Chautauqua Lake Sewer District – Phosphorus Reduction Improvements Design and Construction, Mayville, NY (2016) Sub-consultant to O'Brien & Gere. Currently assisting with general wastewater process consulting services including characterization of historical influent loadings, evaluation of chemical phosphorus removal dosing and chemical types and SPDES permit review.

City of Portsmouth, VA, MLK Bridge Expansion, Fabrication Status Inspector (2016) – sub-consultant to Waterfront Marine Construction – Conducted daily progress inspections of ten bridge plate assemblies including trough, median and curb assemblies at two bridge joint fabricators in Alden and Sanborn, NY. Reviewed daily fabrication progress with foreman and visually confirmed and photodocumented status. Submitted daily reports summarizing status along with completion schedule including sequences and interdependencies.

Onondaga County Water Environment Protection, Erie Boulevard Storage System Evaluation of Chemical Disinfection, Syracuse, NY (2016) Sub-consultant to Landscape & Prospect. Currently reviewing water quality data for the 7.5 ft by 10.5 ft by 8,640 ft long concrete Erie Boulevard storm sewer storage system as part of the County's combined sewer overflow (CSO) abatement program. Evaluating the effectiveness of peracetic acid (PAA) as an alternative to chlorine disinfection based on bench-scale testing results. Conducting a desktop evaluation of PAA and chlorine disinfection including developing pertinent design criteria and feasibility issues for disinfecting dry weather discharge from a CSO outfall.

Springville 2016 Sewer Assessment, Springville, NY (2016). Currently documenting the Village's 2016 sanitary sewer activities including manhole assessments and sewer maintenance and rehabilitation.

Springbrook Shores Wastewater Treatment Plant – Treatment Plant Inspection and Cost Estimate – Reduced Scope – Elma, NY (2016) Marrano/Marc Equity. Inspected existing condition of WWTP and estimated cost for rehabilitation. Reviewed existing Return Activated Sludge (RAS) pumping system, nitrification capacity, and effect of wet weather on treatment plant flow rate.

South & Center Chautauqua Lake Sewer District Desktop Evaluation of Hydraulic & Process Capacity – Jamestown, NY (2015) Sub-consultant to O'Brien & Gere. Conducted hydraulic and process evaluations of existing 2.3 mgd two-stage activated sludge system with a low level phosphorus limit. Facility experienced peak hourly flows of up to 8.6 times average flow. Calculated aeration basin and clarifier loadings for conversion to single-stage nitrification process. Recommended blending option to provide full secondary treatment of flows up to 11 mgd and partial (primary) treatment of flows in excess of 11 mgd. Estimated impact on other treatment processes. Estimated projected blended effluent quality.

Representative Projects – Prior to L2 Engineering D.P.C.:

NUTRIENT REMOVAL

Olean Wastewater Treatment Plant (WWTP) Upgrades – Biological Process System Equipment Procurement Design, Olean, NY, (2014) Senior Engineer – Project engineer responsible for the design of the integrated fixed film activated sludge (IFAS) process to increase hydraulic capacity as well as meet new summer and winter ammonia limits. Developed design criteria and worked with municipality and vendors to develop equipment procurement design. Developed contract documents including technical specifications and contract drawings. Reviewed vendor bid documents based on best value.

City of Olean Wastewater Treatment Plant (WWTP) Master Revisions & WWTP Preliminary Design Report, (2013) Project Engineer. – Updated Olean WWTP's Master Plan to increase permitted flow from 7 mgd to 12 mgd and inclusion of ammonia limitations. Evaluated capacity of existing equipment from headworks to digestion to determine necessary equipment upgrades. Worked with process modeler to develop innovative secondary treatment alternatives. Developed capital costs. The selected alternative: installation of an IFAS process within the existing secondary tanks increased the hydraulic capacity without construction of additional aeration basins or secondary clarifiers. Evaluated solids handling processes. Recommended elimination of co-settling of secondary solids in the primary clarifiers along with addition of a gravity sludge thickener to eliminate the need for additional anaerobic digestion capacity.

Onondaga County WEP, Metro WWTP Optimization Analysis of Total Phosphorus, Syracuse, NY, (2011) Process Engineer. Developed the Work Plan and recommended alternatives for optimizing phosphorus removal at the 85 mgd Onondaga Metro WWTP. Processes evaluated included primary and secondary treatment, high-rate flocculation tertiary sedimentation and return streams. Researched phosphorus removal mechanisms, developed and implemented bench and full-scale testing strategies, evaluated results, and recommended process upgrades and operation and maintenance (O&M) improvements to achieve optimal performance while balancing O&M expenses. Developed process recommendations.

Onondaga County WEP, Phosphorus Removal Technologies at Metro WWTP, Syracuse, NY, (2012) Process Engineer. Analyzed the current and projected limit of technology (LOT) for phosphorus removal at Onondaga Metro WWTP. Developed the work plan and identified and collected data from the WWTP as well as from other ultra-low level phosphorus facilities and databases. Directed sub consultant's statistical analysis effort and incorporated results to establish the current and projected LOT. Provided justification for submittal to the New York State Department of Environmental Conservation (NYSDEC). Assisted with the development of alternative tertiary treatment technologies.

Erie County Department of Environment and Planning, Lackawanna Wastewater Treatment Plant Elimination Study, Lackawanna, NY, (2011) Process Engineer – Developed a sampling plan and conducted a mass balance on nitrogen. Evaluated feasibility of upgrading the facility to meet proposed ammonia discharge limitations. Guided junior engineer through development and evaluation of alternatives.

Chautauqua Lake Integrated Sewage Management, Chautauqua County, Senior Engineer (2014) – Assisted with developing a sewage management plan to meet a phosphorus total maximum daily load (TMDL) for Chautauqua Lake. Reviewed the upgrade plans of five WWTPs with design flows ranging from 0.9 to 4.1 mgd to reduce effluent phosphorus concentrations to 0.2 mg/L or less as well as accept additional flow from existing onsite wastewater treatment systems and residential septic systems.

City of Batavia, Water Pollution Control Plant pH Management, NY, (2011) Process Engineer – Established and implemented a project work plan for identifying causes and solutions of pH excursions at a 250-acre lagoon treatment system. The high pH was caused by excessive algae which was the result of high nutrient levels in the lagoons. Developed an extensive year-long wastewater characterization sampling plan. Evaluated data to develop and recommend operational changes to minimize algae formation. The WWTP has not experienced a pH excursions since implementing the recommendations.

PUMPING SYSTEMS:

Empire State Development, Erie Canal Harbor Project – Canalside Pumping and Cascade Aeration (Waterfall) System, NY, Design Engineer – Prepared the process and mechanical design of pumping and step aeration systems to flush and aerate the Erie Canal terminus following wet weather events. Suggested and developed a concept consisting of cascade aeration as an appealing alternative to conventional diffuser aeration. Provided technical oversight and coordination of the project team consisting of civil, hydraulic, structural, electrical and instrumentation & controls engineers and designers from preliminary design through bid phase. Coordinated the engineering effort with the prime engineer as the scope of work was modified.

Town of Niagara, Sewage Lift Station Evaluation, NY, Engineer – Evaluated mechanical, structural, architectural and HVAC components with respect to regulations, assessed the power usage of four lift stations, and suggested modifications for increasing capacity and reducing electrical consumption while bringing the lift stations into regulatory compliance. Conducted a life-cycle cost analysis.

Erie County Department of Environment Protection, Various Pump Station Projects, NY, Junior Engineer – Evaluated the capacity of multiple existing gravity sewers, force mains, and pumping stations. Prepared life-cycle cost estimates and reviewed shop drawings of mechanical equipment for new pump stations.

SEWER SYSTEM EVALUATION SURVEY (SSES) AND WET WEATHER ANALYSES

City of Salamanca, Sanitary Sewer Flow Metering Study, NY, Design Engineer – Established and directed a sanitary sewer flow metering study to evaluate the effect of casino flows on wastewater systems. Evaluated flow metering results and recommended gravity sewer upgrades. Determined the capacity of existing WWTP components. Established projected hydraulic, organic, and solids loadings for various phases of Casino development. Evaluated current sludge treatment and disposal methods, proposed alternatives for treating and disposing of sludge, evaluated options based on life-cycle cost, and provided recommendations.

Village of Youngstown, Infiltration/Inflow Reduction Study, NY, Engineer – Worked with the municipality to establish the project scope and budget. Directed the flow monitoring field effort and evaluated the sewer system to identify potential sources of extraneous flow. Provided recommendations to reduce flow.

Town of Amherst, Snyder Sanitary Sewer Evaluation Survey, NY, Engineer – Worked with the municipality to establish the project scope. Coordinated and directed Town personnel in flow monitoring, smoke testing, and surveying efforts. Provided observation of smoke testing, and reviewed sewer televising and manhole evaluation results. Estimated the capacity of the existing sewers and identified areas with insufficient capacity or in need of rehabilitation. Recommended and prioritized methods to reduce extraneous flow, eliminate a permitted by-pass, and increase the capacity of the collection system.

CO-DIGESTION:

Biogas Demonstration Project (2013), Confidential Client, Eastern NY, Senior Engineer – Conducted feasibility analysis of co-digesting food waste, fats, oil, and grease along with municipal biosolids to generate biogas for combined heat and power (CHP) at a 29 mgd facility. Evaluated pilot results. Developed a methane generation model. Prepared a basis of design for anaerobic digestion, gas handling and CHP systems. Prepared preliminary design criteria for proposed feed stock and FOG receiving stations, grinders, equalization, digester, dewatering, methane storage and siloxane removal and CHP equipment.

Digester Feed Stock Availability and Economic Impact Evaluations (2014), Buffalo Sewer Authority, Senior Engineer – Evaluated existing digester capacity and the ability to receive a variety of liquid, slurry and solid food waste feed stocks. Estimated methane generation using previous experience and literature values. Provided recommendations for upgrading the existing anaerobic digestion system. Developed feasibility-level estimated costs and pay back. Oversaw sub consultant survey of potential, regionally-available feed stocks. As a result of the study, the client has requested development of a preliminary design for a new receiving station and conversion of existing tankage to accept and equalize food waste feed stocks.

FEASIBILITY STUDIES:

New York State Energy Research and Development Authority (NYSERDA), Coarse Monomedia Filtration Technology Transfer Project, Various Locations in Western and Central NY, Process Engineer – Evaluated the feasibility of upgrading existing tertiary sand filters at two WWTPs with coarse monomedia filtration (CMF) technology. The evaluation included laying out proposed equipment, identifying necessary upgrades to existing equipment and facilities, and performing capital and O&M cost estimates for existing and proposed coarse monomedia filters. Prepared individual plant reports and summarized the effectiveness of CMF at four facilities in a NYSERDA technology transfer report.

Erie County Department of Environment and Planning (ECDEP), Village of East Aurora Wastewater Treatment Consolidation Study, East Aurora, NY, Engineer – Compared the feasibility of upgrading the existing WWTP with abandoning the plant and conveying the sewage to the Southtowns Sewage Treatment Agency (SSTA). Evaluated the capacity of the existing sewer system from the plant to SSTA. Identified potential alternate sewer routings. Evaluated the existing plant capacity and conditions in accordance with Ten State Standards, manufacturers' recommendations, and standard engineering practices. Identified plant upgrades needed to continue operations for the next 30 years. Estimated capital and O&M costs and summarized the recommendations in report.

City of Geneva, Coarse Monomedia Filtration Pilot Study, NY, Process Engineer – Assisted with the design and implementation of a CMF pilot study to treat raw wastewater. Reviewed the validity of data and projected effluent water quality for the full-scale facility based on pilot study data trends. Identified capital improvements and estimated capital and O&M costs associated with full-scale implementation.

ECDEP, Spaulding Lake Area Sewage Treatment Plant Consolidation Study, NY, Engineer – Evaluated three WWTPs. Determined existing plant conditions and capacities based on Ten State Standards and compared with projected flows. Identified necessary plant upgrades, provided potential sewer routes, estimated capital and O&M costs, and evaluated five consolidation alternatives based on estimated life-cycle costs.

ECDEP, Evaluation of Ultraviolet (UV) Radiation Disinfection Technologies for WWTP Effluent, NY, Engineer – Assisted in the design of three UV pilot units, each equipped with a different lamp type to compare disinfection effectiveness and life-cycle costs. Performed constructability and hydraulic analyses to determine the requirements and conceptual capital of retrofitting a full-scale UV disinfection system.

INDUSTRIAL WASTEWATER

Automotive Manufacturer, Wastewater Pretreatment Facility Design, Tonawanda NY, Project Engineer – Responsible for the design of a wastewater pretreatment facility from process conception through preparation of plans and specifications. Performed life-cycle cost analyses of two treatment alternatives; coordinated pilot-scale testing; recommended the appropriate process to the client; and established design criteria for all process equipment including inclined plate settler, process, and storage tanks and ultrafiltration system. Designed treatment plant layout and prepared the sequence of operations. Prepared contract documents for the main treatment process (ultrafiltration). Provided oversight of the design team consisting of chemical, mechanical, and electrical engineers. Directed design effort of system components including rotary drum screens, corrugated plate interceptors, oil tank farm, mixers, chemical addition, pH neutralization, pumps, and piping.

Concentrated Industrial Discharge Feasibility Study, NY, Confidential Client, Process Engineer – Evaluated the feasibility of a municipal POTW to accept a concentrated industrial wastewater. Identified limitations to accepting the discharge, established pilot testing procedures to determine coagulant type and dose, and recommended necessary facility O&M modifications as a result of accepting the discharge. Involved in negotiations between the WWTP and industry to establish a Memorandum of Understanding.

Health and Beauty Aids Manufacturer, Activated Sludge Process Evaluation, NY, Project Engineer – Led the process evaluation of non-compliant activated sludge system owned and operated by a direct discharge health and beauty aids manufacturer. Suggested biological analyses and assisted with the interpretation of microscopy results and development of recommendations. Following implementation of the recommendations, the discharger was compliant.

Juice Manufacturer, Biochemical Oxygen Demand (BOD) Reduction Feasibility Study, NY, Project Engineer – Evaluated pretreatment methods to reduce BOD concentrations in process wastewater effluent from a fruit juice manufacturer. Evaluated discharge permit requirements, recommended capital improvements, and estimated construction costs. Analyzed life-cycle costs to determine if lower sewer use charges would offset the cost of implementing pretreatment.

Confidential Client, Precipitation and Flow Study, NY, Design Engineer – Prepared the proposal and developed the budget, health & safety and work plans to examine the correlation between precipitation and flow. Prepared sub-contracts and directed the team's field, data evaluation, and report efforts.

Chemical Manufacturer, Process Sewer Line Separation and Flow Study, NY, Project Engineer – Responsible for establishing scope of work and budget, ordering equipment, and coordinating project team's effort to determine process flow contributions from individual manufacturing processes. Established a flow monitoring program, evaluated data, allocated flows, identified potential problems with the sewer system, and recommended methods for reducing operating costs. Served as the entry supervisor for all permitted confined space entries. Following the implementation of recommendations, the client saved nearly \$900,000 annually in sewer use charges.

Pharmaceutical Manufacturer, Oil and Grease Reduction Study and Design, NY, Project Engineer – Investigated methods to reduce the total oil and grease concentration in process wastewater to meet the discharge limitation; the facility risked closure if it remained non-compliant. Selected the process and assisted in the design of the system. Components included an oil and water separator, organo-clay adsorption drums, safety release valves, and an overflow alarm system.

Buffalo Sewer Authority, Mass Allocation Manual Buffalo, NY, Project Engineer – Developed a guidance manual for issuing industrial user discharge permits to the Buffalo Sewer Authority collection system. The manual included identification of parameters of concern, establishing discharge limitations, and setting discharge limitations for industrial users. The manual was prepared based on applicable federal and state air, sludge, ash, and water regulations.

Various Confidential Clients, Industrial Compliance Monitoring, NY, Project Manager – Managed numerous industrial compliance monitoring projects. Identified the project scope through discussions with clients and regulatory agencies. Prepared proposals, established project teams, and prepared and submitted discharge monitoring reports. As necessary, trained field personnel, performed field operations, and discussed implications of non-compliance with clients.

POTABLE WATER TREATMENT FACILITIES, SUPPLY, AND STORAGE

Village of Alden, Water System Improvements, Capacity, and Pilot Testing Assistance, NY, Project Engineer – Prepared the pilot study protocol and coordinated vendor pilot activities for an aeration, filtration, and electromagnetic water conditioning system. Evaluated data, established key design criteria, developed an engineering report, and summarized pilot study findings and results in a technical memorandum.

City of Buffalo, Division of Water, Zebra Mussel Removal, NY, Project Engineer – Identified options for removing and disposing of zebra and quagga mussels contained in the Emerald Isle Water Intake that provides water to the City of Buffalo based on NYSDEC, American Society of Civil Engineers (ASCE), and New York State Department of State (DOS) requirements. Prepared permit applications for discharge of mussels to the Niagara River. Directed sub consultant effort to remotely televise intake. Developed mussel removal methodology. Prepared health and safety plan and job safety analyses (JSAs) for accessing the Intake from the Edward Cotter fire boat in mid-winter.

City of Silver Creek, Water Storage Tank, NY, Design Engineer – Prepared contract drawings and specifications for a 400,000-gallon water storage tank including cathodic protection. Assisted in site layout selection and the geotechnical investigation.

City of Geneva, Water System Improvements, Microfiltration Evaluation, NY, Project Engineer – Performed preliminary engineering on two proposed microfiltration systems which included laying out equipment, identifying ancillary equipment and modifications to the existing facility, proposing preliminary operations, and estimating energy and chemical usage. Estimated capital and O&M costs and summarized findings in a preliminary engineering report.

Village of Cassadaga, Water System Evaluation, NY, Project Engineer – Analyzed the water system including evaluation of an existing well field, water storage tank, water distribution system, and data on proposed well fields and water quality. Summarized the findings in an engineering report.

Glen Water and Sewer District Formation, Glen, NY, Project Engineer – Performed a detailed evaluation of the formation of a proposed water and sewer district. Reviewed existing well water source data, identified a potential new water source, calculated design flows, suggested potential water treatment alternatives, and sized piping and a water storage tank. Offered a unique solution for the formation of a drinking-water only (non-fire department) district to allow the community to fund the project.

Village of Silver Creek, Water Distribution System Analysis, NY, Project Engineer – Performed a modeling analysis of the Village of Silver Creek's water distribution system which serves a population of 2,900. The system was analyzed in full detail to evaluate its adequacy of meeting existing and projected water demands including fire flow requirements. Deficiencies in the system were identified and recommended improvements were prioritized.

Village of Hanover, Water Distribution System Analysis, NY, Project Engineer – Performed a water distribution system analysis for the Village of Hanover, serving a population of 1,700. Laid out a skeletonized pipe network system, allocated water demands, and estimated the fire flow demand at a proposed 200-unit hotel, in accordance with insurance service organization standards. The system was evaluated to determine deficiencies under fire flow conditions at six locations in the village. Upgrades to the existing water distribution system were recommended.

City of Salem, MA – Residential Water Line Installation, Resident Inspector – Inspected 8-inch residential waterline installation. Monitored daily performance of Contractor and prepared daily inspection reports. Reviewed shop drawings and interfaced with the municipality through onsite meetings and written correspondences. Inspected material deliveries to ensure compliance with approved shop drawings. Witnessed all construction activities including rock blasting, compliance testing and paving operations. Prepared punch list items and monitored activities to ensure punch list item resolution. Monitored contractor's daily clean-up and compliance with traffic protection specifications. Maintained field records to show actual construction as well as field changes. Processed contractor monthly payment requests.

City of Dunkirk, Pilot Scale Ozonation, NY, Project Engineer – Assisted in the design of a pilot plant to simulate the treatment processes of the Dunkirk Water Treatment Plant. Responsible for sizing the pilot equipment to simulate full-scale operations including the hydraulic design of all water treatment processes (pumping, mixing, flocculation, sedimentation, filtration, and ozone contact column).

ENVIRONMENTAL

Town of Ramapo, Ramapo Landfill Remediation, NY, Project Engineer – Provided oversight and conducted a multi-year post-construction air and groundwater monitoring program. Developed an air monitoring program for the landfill. Developed budget, coordinated staff and laboratory analyses, and rental of equipment.

U.S. Air Force, Plattsburgh Air Force Base O&M, Plattsburgh, NY, Project Engineer – Assisted in direction of project team’s effort to operate and maintain groundwater treatment plants, a product recovery system, bioventing systems, and soil vapor extraction systems. Evaluated the performance of groundwater treatment systems and assisted in the upgrade design of an existing lamella clarifier to incorporate ballast assisted sedimentation. Conducted jar testing to select coagulant and polymer and determine dosages, and assisted with system start-up. Prepared discharge monitoring reports. Developed standard operating procedures for air, water, and waste sampling; waste disposal; equipment rehabilitation; and routine maintenance procedures. Interfaced with AFCEE representatives monthly.

Niagara Falls Water Board, Hexachlorocyclohexane (BHC) Pollutant Minimization Plan – Engineer responsible for development of BHC pollutant minimization plan in accordance with NYSDEC guidelines. Reviewed databases to identify potential sources and frequency of detection within the WWTP as well as in the collection system and from Significant Industrial Users (SIUs). Provided recommendations for reducing BHC concentration in plant influent and effluent. The Plan is currently being reviewed by the NYSDEC.

City of Niagara Falls, 60th Street Storm Sewer Cleaning, Televising and Replacement, NY, Design Engineer – Provided design services for the cleaning, televising, and replacement of a 60-inch diameter storm sewer. Prepared contract documents, provided pre-bid services, and awarded the contract.

Publications and Presentations

PAPERS

M. Manning and L. Lehnen 2016. **Evaluated Procurement for Biological Process Systems (Olean WWTP Case Study)**. Greater Buffalo Environment Conference, Buffalo, NY, March 2016.

Lehnen, L. and M. Manning 2016. **Olean WWTP Case Study**. Erie/Niagara Chapter of the Society of Professional Engineering, Engineer’s Week Seminar, Buffalo, NY, February 2016.

Windus, T and L. Lehnen 2014. **Olean WWTP Upgrades for Increased Hydraulic Capacity and Nitrification**. Greater Buffalo Environment Conference, Buffalo, NY, March 2014.

Lehnen, L.J. 2013. **Total Phosphorus Impacts on Solids Handling and Processes**. Genesee Valley and Central Chapters Joint Meeting for Stormwater and Phosphorus Removal, Lyons, NY, May 2013.

Lehnen, L.J. and P. Smith, 2012. **Nutrient Removal**. 6-hour operator and PDH training course. New York Water Environment Association Operator Training Seminars – Lower Hudson Chapter, Monticello, NY, November 2012.

Lehnen, L.J. and H. Brewer. 2012. **Recent Advances in Ultra-Low Phosphorus Discharges**. New York Water Environment Association Spring Conference, Buffalo, NY, June 2012.

Piagno, H., H. Brewer, and L. Lehnen. 2012. **Achieving Ultra-Low Total Phosphorus Concentrations: Technology Performance Statistics and the Implications of Phosphorus Speciation**. Water Environment Association of Ontario Technical Symposium, Toronto, ON, April 2012.

Lehnen, L.J. 2011. **Limits of Technology for Phosphorus Removal**. Greater Buffalo Environment Conference, Buffalo, NY, March 2011.

Lehnen, L.J. 2011. **Wastewater Treatment – Nutrients**. Erie/Niagara Chapter of the Society of Professional Engineers, Engineer’s Week Seminar, Buffalo, NY, February 2011.

Lehnen, L.J. 2011. **Effective Bench, Pilot, and Full-scale Testing – Getting the Answers You Need**. New York Water Environment Association Annual Conference, New York City, NY, February 2011.

Funke, D. and L.J. Lehnen. 2010. **Water Treatment Regulatory and Technology Update**. Erie/Niagara Chapter of the Society of Professional Engineers, Engineer’s Week Seminar, Buffalo, NY, February 2010.

Lehnen, L.J. 2009. **Evaluation of Iron & Manganese Removal and Hardness Reduction Techniques**. Western New York Water Works Conference Workshop, Buffalo, NY, October 2009.

PUBLISHED REPORTS

Lehnen, L.J. 1994. **MSEE Report: Measurement, Formation, and Control of Bromate in Ozonated Waters**. December 1994