



WATER SUPPLY ENGINEERING SERVICES

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FIRM PROFILE

PWGC: ENVIRONMENTAL ENGINEERING & CONSULTING

MEET PWGC

PWGC was founded 36 years ago to meet the need for a multi-disciplined environmental engineering and consulting firm offering a diverse range of services to meet market demand. Based in Bohemia, NY, PWGC has offices in Manhattan, Monticello, Saratoga Springs, and Syracuse, NY.

PWGC serves the Northeastern United States and has established an industry recognized reputation for innovative problem solving and providing quality services to municipal, educational, private, public and federal clients. We are dedicated to providing timely services that result in practical solutions for our clients.

With nearly 100 employees, we at PWGC understand our strength lies with our licensed professional engineers, geologists and hydrogeologists, LEED accredited professionals and environmental compliance specialists, which gives us a wealth of expertise and experience to bring your project to fruition.

CHOOSE PWGC

Whether your objectives are planning, design, redevelopment, remediation or resiliency, PWGC's services are innovative and economical. PWGC is committed to meeting client goals, and our dynamic team of professionals provide the innovation and flexibility necessary to deliver project-driven solutions.

THE PWGC DIFFERENCE

What sets us apart is our targeted approach to each project, the allocation of a dedicated and responsive team, our rapport with relevant regulatory agencies, and our exceptional project management. These assets provide client value and include the following:

- Strong working relationships with key regulatory sector players
- Specialists in regulatory requirements to facilitate quicker approvals
- Highly responsive to project budgets and time constraints
- Project and quality control monitoring that meet project needs
- Dozens of dedicated professionals to provide a wide array of services
- Strong understanding of environmental compliance standards

Make PWGC's quality environmental consulting and engineering solutions work for you.

PWGC QUICK FACTS

Corporate

- Founded & Incorporated: 1990
- SAM/SBA Registered
- Small Business
- DUNS # 152032251
- Federal ID: 11-3037778

Offices

- Bohemia, NY
- New York, NY
- Saratoga Springs, NY
- Monticello, NY
- Syracuse, NY

Qualifications

- LICENSES - Engineer, Geologist, LSP, NC, NY, NJ, PA, MD, IN, NH, FL, WA
- LEED-AP
- Envision

Service Codes

- NAICS
- 541620 Environmental Consulting
 - 541330 Engineering
 - 562910 Environmental Remediation
 - 562998 Waste Management Services
 - 541370 GIS Base Mapping
 - 237130 Green Services



BOHEMIA, NY • NEW YORK, NY • MONTICELLO, NY • SARATOGA SPRINGS, NY • SYRACUSE, NY
 P: 631.589.6353 • F: 631.589.8705 • PWGROSSER.COM

SUMMARY LIST OF SERVICES

Environmental Services

- Investigation and Remediation Programs
 - Brownfields Redevelopment, including tax credit evaluation
 - Federal and NYS Superfund Site Investigation & Remediation
 - NYC OER E-Designated Sites, including grant funding application
- Phase I, Phase II Environmental Site Assessments
- Petroleum, Chemical, PFAS, and 1-4 Dioxane Spill Investigation & Remediation
- Vapor Intrusion Mitigation & Remedial Design
- Remedial Construction Management
- Soil & Waste Characterization / Disposal Management
- Cost Estimating—Property Investigation & Remediation
- RCRA Site Closure Reports
- MOSF Closure
- Air, Water, & Soil Sampling/Monitoring
- Radiological Investigation & Remediation Services

Environmental Compliance/Management

- Air Quality—Title V Permitting, Air Emission Inventories, Tier II & TRI Reporting
- Articles XI & 12 Hazardous Materials Storage Compliance for Nassau & Suffolk Counties, NY
- Chemical/Petroleum Bulk Storage Tanks—Permitting, Audits, Regulatory/Environmental Compliance Management
- Facilities Contingency Plan Development/Management, including SPCC, SWPPP, FRP
- Compliance Review
- Regulatory Compliance Reporting
- FAR 139.321 Fire Safety Inspections
- Fuel Storage Facilities & Mobile Fuel Equipment
- Stormwater Management
- Dewatering Design, Permitting & Compliance Sampling

Industrial Hygiene

- Asbestos Bulk Sampling
- Project Monitoring
- Indoor Air Quality
- Opacity Testing
- Mold Testing and Remedial Plans

Wastewater/Water Supply

- Water Supply/Wastewater—Systems, Planning, Design
- Groundwater Modeling
- Site/System/Feasibility Evaluation, Planning & Technical Assistance
- Water Conservation Plan Development

Natural Resource Studies

- Wetlands Delineation, Permitting & Mitigation Design
- Threatened & Endangered Species Surveys
- Migratory Studies
- Ecological Studies
- Ecological Risk Assessments
- National Environmental Policy Act (NEPA) Studies
- Planning
- Watershed Analysis

Energy/Sustainability Solutions

- Geothermal System Feasibility Analysis, Design, Permitting & Construction Management
- Renewable Energy Design for Solar & Wind
- Building Due Diligence & Energy Studies
- LEED Administration & Sustainable Design Practices
- Power Generation, Cogeneration & Fuel Cells
- Energy Modeling, Utility Rebate Programs & Tax Incentives

Civil/General Engineering

- Comprehensive Feasibility Studies
- Construction Planning, Management, QA/QC
- Drainage Planning, Grading & Design
- Facility Design & Condition Assessment
- Planning & Design
- Property Condition Report

SEQRA Consulting and Planning Services

- SEQRA Process Administration
- Type II Opinion Letters
- Coordinated Review
- Environmental Assessment Forms
- Scoping Documents
- Environmental Impact Statements
- Determinations of Significance
- Findings Statements
- Notices and Assistance with Resolutions
- Land Use and Zoning Assessments

Geographical Information Systems/Global Position Systems

- Data Collection & Conversion
- Asset Management
- Digital Elevation Model Analysis
- GIS Applications, GIS/CAD Integration, & Manual Digitizing
- Database Development
- GPS Field Data Collection & Post-Processing
- Image Collection & Image Processing
- Licensed FAA UAV Pilots



The background of the entire page is a high-speed photograph of water splashing, creating numerous droplets and ripples. A solid blue overlay covers the entire image. In the upper right, a white rectangular box contains the text 'WATER SUPPLY ENGINEERING SERVICES' in a bold, white, sans-serif font. In the lower left, there are several concentric, semi-transparent blue circles that appear to be part of a larger design element.

WATER SUPPLY ENGINEERING SERVICES

WATER SUPPLY ENGINEERING

Water suppliers, and entities in need of water supply expertise, that team with PWGC receive a complete range of related civil/environmental engineering services. Our significant experience in the water supply realm allows for our clients to minimize operational problems that can be related to issues such as source water contamination, changing regulations, treatment systems, biological activity and storage tanks.

Understanding the client's objectives and using latest technology to accomplish that objective is why PWGC has an industry-recognized reputation for quality in the engineering field.

Clients benefit from cost-effective solutions through the utilization of tools that include GIS, which allows PWGC to manipulate mapping and digital images to produce accurate plans prior to file verification.

Comprehensive water supply services include:

- Analysis and Projection of Water Demand
- Capital and Operational Long Range Planning
- Water Rate and Connection Charge Studies
- Design of Wells, Water Supply Sources, Treatment Systems, Pumping Stations, Transmission and Distribution Systems and Storage Tanks
- Groundwater and Surface Water Modeling
- Analysis and Prediction of Water Quality Problems
- Water Main Rehabilitation
- Negotiation of Water Quality Sampling Plans
- Construction Phase Services
- Plant Start-up and Training Services
- Electronic Utility Management Services
- Corrosion Control Studies (Lead and Copper Monitoring Compliance)
- Water Conservation Planning



WATER SUPPLY ENGINEERING EXPERIENCE

Wertheim National Wildlife Refuge - Shirley, NY—POET System Design and O&M

PWGC designed and installed three Point of Entry Treatment (POET) Systems at the refuge, one in a maintenance garage and two in residential buildings located within the refuge. The POET Systems were designed to remove per- and poly fluoroalkyl substances (PFAS) that were detected in the groundwater supply wells servicing the three structures. PWGC prepared a Engineering Report and Operations and Maintenance Manuals for the systems. PWGC oversaw the installation and start up testing of the systems. PWGC performs the scheduled system sampling to ensure that the systems are functioning as designed.

Town of Babylon - Potable Water Well & Distribution Design (Gilgo Beach)

In 2018, PWGC provided professional engineering services related to requested upgrades to the potable water supply system at the Town of Babylon's Gilgo Beach to bring the current system into compliance with Suffolk County's Department of Health Services (SCDHS) requirements and provide adequate water supply to recently installed marina hose bibs.

PWGC provided design and construction oversight services that included the following:

- The design flow control devices for the existing marina hose bibs.
- The design of a new hydro-pneumatic tank, foundations, and controls.
- The design of a new enclosure surrounding the hydro-pneumatic tank.
- The design of an RPZ to service the Gilgo Beach Inn and the existing restrooms.
- The design of a new water service for the Gilgo Beach Inn.
- The design piping modifications such that the backwash of the existing iron removal equipment can be performed with treated water in lieu of utilizing untreated water from the existing well.
- Preparation of drawings for the recently installed marina service piping.

PWGC provided construction oversight and administration services on an as needed basis, which included the review of shop drawings, project correspondence, preparation of as-built drawings and attendance during the inspection of the facilities by SCDHS representatives.

Town of Babylon - Potable Water Well & Distribution Design (Overlook Beach)

PWGC provided professional engineering services related to requested upgrades to the potable water supply system at the Town of Babylon's Overlook Beach, which was suffering from issues due to well degradation issues.

PWGC provided design and construction oversight services that included review of the previous water supply well. After review of the previous system it was determined that issues associated with defects in the well's screen and casing was permitting sand permeation. PWGC recommended that rather than drilling a new well, the Town should rehabilitate the current well, which was still capable of meeting the Town's water demand requirements. This approach saved the Town significant infrastructure costs and facilitated the quick turnaround of the project.

Further, PWGC designed piping modifications such that the backwash of the existing iron removal equipment can be performed with treated water in lieu of utilizing untreated water from the existing well.

PWGC will provide construction oversight and administration services on an as needed basis, including the review of shop drawings, project correspondence, preparation of as-built drawings and attendance during the inspection of the facilities by representatives of Suffolk County's Department of Health Services.



WATER SUPPLY ENGINEERING EXPERIENCE

Water Authority of Great Neck North - Well No. 6 VOC Treatment System

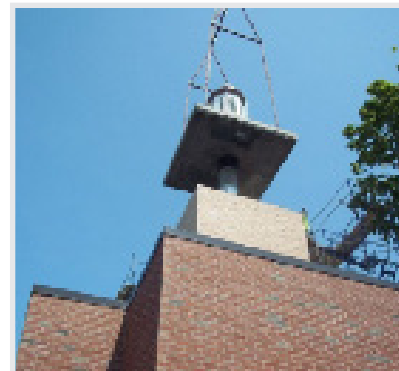
The Water Authority of Great Neck North (WAGNN) is a public benefit corporation that has been authorized to provide potable water to the area of the Great Neck Peninsula, Long Island, New York. This area encompasses Villages of Great Neck, Great Neck Estates, Kensington, Kings Point, Saddle Rock, a portion of Thomaston and Great Neck Plaza and unincorporated areas of the Town of North Hempstead. The WAGNN has a services area of approximately 7.5 square miles and provides potable water to approximately 32,400 residents and businesses. WAGNN's Well No. 6 site had low levels of volatile organic compounds (VOCs) in the drinking water. Although the concentration of VOCs was less than the concentration level that would mandate treatment, WAGNN has implemented an internal policy where VOC contamination within the drinking water supply is unacceptable and it must be removed to non-detectable levels.

WAGNN authorized PWGC to provide professional engineering services for the permitting, design and construction services for a new VOC treatment system at Well No. 6.

Services provided to WAGNN were broken down into four (4) phases. First, PWGC met with WAGNN officials to review and identify the needs and objectives of the project. Once known, PWGC discussed various options and alternatives to achieve project goals within budget. Second, the existing records did not exist for the pump station requiring PWGC to inventory and document existing conditions of the well house construction, below grade chemical storage tanks and utilities, existing electrical and mechanical equipment, chemical safety control devices, and supervisory control and data acquisition (SCADA) system. The third phase addressed tidal wetlands permitting issues with the New York State Department of Environmental Conservation (NYSDEC). The final phase saw PWGC prepare a design engineering report and construction and bidding documents. This consisted of plans and specifications that depicted and illustrated the intended improvements pertaining to the proposed VOC air stripping treatment system and related appurtenances.

In order to effectively complete the VOC treatment system PWGC overcame complex design challenges, which included the design and construction of the water treatment facilities on a very small site - 1,200 square feet. Further, the construction site abutted an existing, high-end waterfront home. The new water treatment facilities had to consist of an air-stripping tower enclosure, clearwell, booster pumping station building, blower room, chemical storage area and new electrical switchgear.

It was necessary to design and construct an enclosure to conceal an air-stripping tower and exhaust stack. The enclosure had to be aesthetically acceptable for the surrounding community and be economically viable. Since there would be future maintenance on the air stripping tower, it would be necessary to design an enclosure to provide complete access to the air stripper and, if necessary, be able to remove the air stripper from the enclosure. PWGC worked closely with the community and was able to design the facilities to be aesthetically acceptable while minimizing costs. The architectural fenestration was to resemble a "maritime" lighthouse.



WATER SUPPLY ENGINEERING EXPERIENCE

Water Authority of Great Neck North - Design of North Well No. 14

As the engineer of record for the Water Authority Great Neck North (WAGNN), PWGC performed a system wide evaluation on the existing infrastructure. The project was undertaken in four (4) phases.

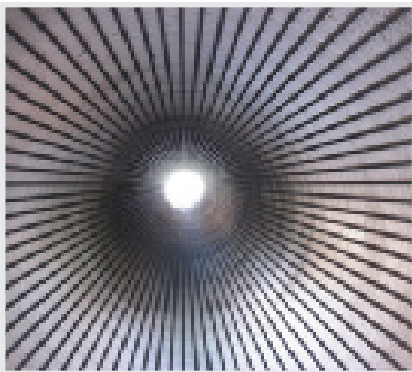
PHASE 1 - PWGC prepared an application and engineering report that discussed the existing infrastructure, including the distribution system, wells and pump stations and associated treatment, storage tanks, and back-up power. An analysis of needs was performed to determine the adequacy of WAGNN's ability to reliably provide water to its customers. PWGC's study revealed WAGNN was deficient in its ability to provide potable water and recommended the construction a new 1,400 GPM well. The location of the well was in the Community Drive Well Field.

PHASE 2 - PWGC prepared a treatment report, design plans and specifications for the Community Drive Well Field. There were two (2) existing wells at this site and the technology used for treatment of both volatile organic compounds (VOCs) and DCPA in the water for these wells was granular activated carbon. Due to the rising cost of carbon and a new Freon plume approaching the site, it was decided to provide future treatment of the new well and the existing wells by air stripping and to keep the GAC filters online for DCPA treatment. After the report was accepted by the Nassau County Health Department (NCHD), PWGC designed two (2) air strippers and associated appurtenance comprised of dual chamber clear wells, influent and effluent valve chambers, four (4) new booster pump stations, new motor control center, upgrades to the instrumentation and controls, and a new treatment building sufficient in size to install five (5) new GAC/perchlorate filters.

PHASE 3 - A well report was prepared for both the Nassau County Health Department and the New York State Department of Environmental Conservation. Upon approval of well report, PWGC prepared design plans and specifications for the installation of the well.

PHASE 4 - PWGC provided construction oversight and management services for the installation of the 1,400 GPM well. Upon completion of the well and determination there was adequate water quantity with suitable water quality, PWGC was authorized to commence the design of the permanent pump station.

The design of the pump station is a free-standing brick structure that encloses a new vertical turbine pump, motor control center, control valves, and venturi tube. PWGC provided construction administration and oversight services. The pump station has been in operation since February 2013.



WATER SUPPLY ENGINEERING EXPERIENCE

Town of Oyster Bay - Engineering Design & Compliance Management Services

PWGC designed a new vertical turbine deep well - Well 4 - to replace an out-of-service well - Well 3- that suffered turbidity problems and produced poor quality potable water. To meet potable water needs, Tobay Beach had been relying on Wells 1 and 2. Installed in vaults on Ocean Parkway's ocean side, they were prone to flooding during storm events and were not compliant with New York State Department of Health or local Nassau County Department of Health (NCDOH) Sanitary Codes, which required well casing elevations to be above the 100-year floodplain.

PWGC was charged with keeping Wells 1 and 2 operational, while design for new well took place and approval from NCDOH was sought. To reach this goal PWGC took the following steps:

- Completed an Engineering Report for submittal to New York State Department of Environmental Conservation (NYSDEC) and NCDOH to secure permitting and approval for the new Well 4 construction and additional Tobay Beach Park water supply system improvements
- Completed Well 4 design in accordance with NYSDOH, NCDOH, AWWA and Ten State Standards guidelines and regulations for public water supply systems
- Specified a pre-cast concrete building design and helical piles installation to house Well 4 (above the 100 year floodplain) in accordance with NYSSC and NCSC regulations
- Presented two well location options in its design (Option I & Option II)
- Performed a UST subsurface investigation in the vicinity of proposed Option I well location
- Designed the installation of automatic shutdown & system isolation of Wells 1 & 2 in the event of flooding at well vaults
- Prepared abandonment specifications for Well 3
- Incorporated the salvage of existing Well 3 controls for new Well 4 controls
- Proposed to abandon non-compliant cartridge water filters and to refurbish/return to service the decommissioned NSF-approved pressure sand filters at the Treatment Building
- Designed a new dedicated dry-briquette chlorinator system for disinfection of Well 4
- Secured approval from NCDOH to maintain service of Wells 1 and 2 in combination with Well 4 operation enabling Tobay Beach Park to provide additional necessary fire flow at the park in the event of a fire emergency
- Proposed to install portable generator power supply connections at Well 4 and Treatment Building to keep the water supply system in service, at reduced capacity, in the event of power failure

PWGC reviewed available well driller's logs for Wells 1, 2 and 3 and secured well driller's logs and gamma logging data for a USGS monitoring well installed within 150 feet of proposed Option I well location. PWGC's review of available aquifer formation data and area soil lithology confirmed Well 3 was located in an undesirable aquifer formation containing an abundance of silts and clays to depth in excess of 300 feet below grade. After reviewing Well 1 and 2 USGS monitoring well data, PWGC determined that aquifer formation near and close to Ocean Parkway - over 1,000' south from Well 3 - presented more desirable conditions for higher well yield and better water quality (e.g. medium to coarse grained sands). PWGC inspected the vicinity of Option I & Option II well locations to ascertain potential impacts to the new well from contaminant sources within a 200-foot radius, and found evidence of a former gasoline underground storage tank (UST) installation. A magnetometer survey for USTs showed that gasoline UST vent and fill pipes had been cut below grade and UST removed. Based on the vicinity's shallow soil/groundwater sampling results, and subsurface investigation, PWGC confirmed that UST had not leaked while in service, and did not leak, contaminate, or present potential contamination to the new well or soils and groundwater in the area. PWGC understood and effectively addressed the Town's needs and concerns about meeting demands of its residents and park patrons. PWGC completed and submitted 100% draft designs for the new well and well 1 and 2 water system improvements to the Town for review and comments. Currently, PWGC acts as liaison the Town to address its comments speedily. PWGC submitted final design and Engineering Report to the NYSDEC and NCDOH in November 2007. Regulatory review was performed and approval granted. Construction of Well 4, along with water system improvements, was completed in 2011 and has been operating efficiently.



WATER SUPPLY ENGINEERING EXPERIENCE

Crampton Ave, Breuer Ave, Beach Road

P.W. Grosser has designed 2,500 feet of new water mains to replace the existing old, undersized water mains. The design of the water mains improved reliability of the fire protection system. The design was further complicated because it was necessary to keep the existing water mains in operation while the new water mains were installed. PWGC was also responsible for designing the new fire hydrants and the replacement services. The design plans and specifications were submitted to the Nassau County Department of Health Services for approval. PWGC also prepared all construction bid documents and oversaw the bid procurement process. PWGC has performed construction administration and observation service for this project and was responsible for certifying that the construction is in conformance with the plans and specifications.

Grenwolde Drive, Deer Park Avenue and West Terrace Drive

P.W. Grosser designed 2,000 feet of new water mains to connect existing dead end water mains on these streets. As part of the design, it was our responsibility to size the water mains, design new fire hydrants, upgrade existing services, and to keep the existing distribution system in operation while construction proceeded. The new water main design on West Terrace Drive, were performed in conjunction with roadway, drainage and sewer improvements. PWGC also prepared all construction bid documents and oversaw the bid procurement process. Design plans and specifications were reviewed and approved by the Nassau County Department of Health Services. PWGC performed construction administration and observation services and certified the construction was in conformance with the plans and specifications.

Pheasant Run

PWGC designed 1,500 feet of new water main to eliminate a dead end water main on this street. As part of the design, it was our responsibility to size the water main, replace existing hydrants, provide services, and to keep the existing distribution system in operation while construction proceeded. PWGC will also be preparing all construction bid documents and will assist during the bid procurement process. Plans and specifications will be reviewed and approved by the Nassau County Department of Health Services. PWGC performed construction administration and observation services for this project and certified the construction is in conformance with the approved plans and specifications.

Berkshire Road

PWGC designed 1,300 feet of new water mains, services and fire hydrants as part of an emergency repair. PWGC worked very closely with the Nassau County Department of Health Services. PWGC also prepared all construction documents, performed construction and administration services, and certified that the construction was in conformance with the plans and specifications.