



HEALTHCARE COMPLIANCE SERVICES

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FIRM PROFILE

PWGC: SOLUTIONS FOR A CHANGING WORLD

MEET PWGC

PWGC was founded more than 29 years ago by Paul Grosser, PhD, PE, PG, a thought leader who recognized the need for a multi-disciplined engineering and environmental consulting firm that offered a diverse range of services to meet market demand regionally and nationally. Based in Bohemia, NY, PWGC has offices in New York City, Albany, Syracuse, Connecticut and Washington.

PWGC serves the New York Metropolitan region and has established a strong reputation for innovative problem solving and providing quality services to municipal, educational, private, public and federal clients. The firm is dedicated to providing cost-effective and timely services that result in practical solutions for its clients.

PWGC has a multi-disciplined staff of more than 70 professionals, which includes recognized experts in the application of wastewater and water supply technologies. Its strength lies with these licensed professional engineers, geologists and hydrogeologists, LEED accredited professionals and environmental compliance specialists, which gives PWGC a wealth of experience key to helping bring your project from idea to reality.

CHOOSE PWGC

Whether your objectives are planning, design and/or redevelopment, PWGC's solutions are innovative and economical. PWGC is committed to client goals and our dynamic team of professionals provide innovation and flexibility to deliver customized solutions to projects regardless of size, complexity or duration.

THE PWGC DIFFERENCE

What sets us apart is our customized approach to each project, rapport with regulatory agencies and exceptional project management. This approach has cemented PWGC's industry reputation as a leader in engineering. PWGC's assets that translate into additional value for you:

- Strong working relationships with key regulatory sector players
- Specialists in regulatory requirements to facilitate quicker approvals
- Highly responsive to budget & time constraints to get your project on line faster
- Project and quality control monitoring to exceed your project needs
- More than 70 dedicated professionals to provide a wide array of services
- Strict adherence to environmental compliance standards

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

PWGC QUICK FACTS

Corporate

- Founded & Incorporated: 1990
- SAM/SBA Registered
- Small Business
- DUNS # 798730966
- Federal ID: 11-3612196

Offices

- Bohemia, NY
- New York, NY
- Saratoga Springs, NY
- Syracuse, NY
- Seattle, WA
- Shelton, CT

Qualifications

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

Service Codes

NAICS

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

SIC

- 8999 Environmental Services
- 8711 Engineering Services



SUMMARY LIST OF SERVICES

Environmental Services

- Contract Administration
- Petroleum & Chemical Spill Investigation & Remediation
- Remedial Alternative Assessment & Design
- Remedial Construction Management
- Property Transaction Services
 - Due Diligence, RI/FS, PCR
 - Brownfields Redevelopment—Investigation, Remediation, Program Management
 - Phase I, Phase II Environmental Site Assessments
 - NYC E-Designated Sites
 - NYC OER Program Management—Investigations, Remediation, Grant Application
 - Cost Estimating—Property Investigation & Remediation
- Environmental Audits—Assess Environmental Liability
- Environmental Assessment & Contaminant Source Evaluation
- Groundwater Investigation & Remediation
- Aquifer/Pumping Testing
- Risk-Based Approach Solutions
- Site Closure Reports
- UST/AST Management
- Air, Water, Soil & Soil Vapor Sampling/Monitoring Community Air Monitoring
- Environmental & Health Risk Assessment
- Radiological Investigation & Remediation Services
- Hazardous Waste Management
- Soil Management, Certified Clean Fill
- Storm Water Management
- Water Table Evaluation & Flood Mitigation
- Dewatering Design, Permitting & Compliance Sampling

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

Wastewater/Water Supply

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

Expert Counseling/Client Representation

- Expert Testimony, Support & Counsel

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
- Carbon Footprint Analysis, Profile & Management
- Alternative Fueling Station Planning & Design, Equipment Specification, Construction Observation, Permitting, Compliance & Facility Commissioning for Compressed Natural Gas, Hydrogen, Biodiesel & Ethanol-85
- Building Due Diligence & Energy Studies
- LEED Administration & Sustainable Design Practices
- High Performance Sustainable Buildings
- Energy Conservation & Energy Recovery Alternatives
- MEP/High Efficiency Equipment Solutions
- Power Generation, Cogeneration & Fuel Cells
- Energy Modeling, Utility Rebate Programs & Tax Incentives
- Green Legislation & ARRA Stimulus Grants
- GIS Based Modeling for Wind, Solar & Carbon Footprint Analysis

Civil/General Engineering

- “Best Economic Alternatives” Evaluation
- Comprehensive Feasibility Studies
- Conservation Plan Development
- Construction Planning, Management, QA/QC
- Drainage Planning, Grading & Design
- Evaluation, Planning & Technical Assistance
- Facility Design & Condition Assessment
- Planning & Design
- Property Condition Report

Geographical Information Systems/ Global Position Systems

- Data Collection & Conversion
- Infrastructure & Asset Management
- Wetlands & Endangered Species Delineation
- Digital Elevation Model Analysis
- Customized GIS Applications, GIS/CAD Integration
- Database Development, Conversions, Manual Digitizing
- Website development
- GPS Field Data Collection & Post-Processing
- Remote Sensing & Image Processing



A photograph of a hospital hallway. In the foreground, a gurney with a green blanket is parked. In the background, three people in white scrubs are walking away. The floor is shiny and reflective. The overall color palette is light blue and white. A blue banner is overlaid on the right side of the image.

HEALTHCARE COMPLIANCE & PROVIDERS

HEALTHCARE COMPLIANCE

PWGC works closely with our healthcare clients and regulatory agencies to expedite projects, maintain compliance and minimize, if not eliminate, delays. We are committed to using the latest technologies to meet our client's goals.

PWGC provides healthcare compliance services, including the following:

- Regulatory Compliance Reporting
- Environmental and Health Risk Assessment
- UST/AST Management
- Site Selection and Planning
- Environmental Assessments/Environmental Impact Statements
- Feasibility/Economic Studies
- Preliminary and Final Closure Plans
- Remedial Action Plans and Implementation
- Post-closure Environmental Monitoring and Maintenance

Air Quality Services:

- Title V Permitting
- Air Emissions Inventories
- TRI Reporting
- Radiological Emissions

Air Quality Services:

- Title V Permitting
- Air Emissions Inventories
- TRI Reporting
- Radiological Emissions

Contingency Plan Development:

- SPCC
- SWPPP
- FRP

PWGC clients include municipalities, federal agencies, and major industries both locally and nationally. PWGC takes pride in delivering high quality professional services on time, and on budget.



HEALTHCARE PROVIDERS

EASTERN REGION

PWGC provides its services to the following Healthcare providers in the Eastern Region of the United States:

- Amsterdam Hospitality, LLC
- Brookdale University Hospital and Medical Center
- Brookhaven Memorial Hospital
- Children's Hospital and Regional Medical Center
- Northwell Health, formerly North Shore LIJ Health System, et al.
- St. Charles Hospital
- Good Samaritan Hospital Medical Center
- Hackensack University Medical Center
- Hartford Hospital
- Hospital Waste Management
- The New Jewish Home
- Kennewick General Hospital
- New York Community Hospital
- New York Methodist Hospital
- North West Hospital & Medical Center
- NY Downtown Hospital
- NY Presbyterian-Columbia Medical Center
- Overlake Hospital Medical Center
- St. Barnabas Hospital
- Southampton Hospital
- South Nassau Communities Hospital
- SUNY Stony Brook
- Virginia Mason Hospital
- Whitman Hospital and Medical Center
- Winthrop University Hospital

PACIFIC NORTHWEST REGION

PWGC provides its services to the following Healthcare providers in the Pacific Northwest Region of the United States:

- Columbia Memorial Hospital
- Evergreen Health
- Franciscan Health System
- St. Anthony Hospital
- St. Clare Hospital
- St. Elizabeth Hospital
- St. Francis Hospital
- St. Joseph Medical Center
- Good Samaritan Hospital
- Group Health
- Harrison Medical Center
- Harborview Medical Center
- Jefferson Healthcare
- LabCorp Corporation
- Mason General Hospital
- Overlake Hospital Medical Center
- Peacehealth St. Joseph Medical Center
- Providence Centralia Hospital
- Providence Everett Medical Center
- Providence St. Joseph Medical Center
- Providence St. Mary Medical Center
- Providence St. Patrick Hospital
- Providence St. Peter Hospital
- Prosser Memorial Hospital
- Pullman Regional Hospital
- St. Joseph's Medical Center - Chewelah
- Swedish Medical Center
- Swedish Ballard Hospital
- Swedish Cherry Hill Hospital
- Swedish Edmonds Hospital
- Swedish First Hill Hospital
- Swedish Issaquah Hospital
- The Everett Clinic
- Tri-State Memorial Hospital
- University of Washington Medical Center
- Whitman Hospital





HEALTHCARE EXPERIENCE



NORTHWELL HEALTH PROFESSIONAL ENGINEERING SERVICES

CLIENT: NORTHWELL HEALTH

CONTACT: VARIOUS CONTACTS

SITE: VARIOUS FACILITIES

PROJECT MANAGER: JOHN EICHLER, PG, PROJECT MANAGER

PROJECT DESCRIPTION

PWGC provided Northwell Health with Phase I & II Environmental Site Assessments, exploratory excavation, and indoor air sampling services at various site locations.

PWGC's ROLE

PWGC provided the following services for the following projects:

- Phase I ESA - 250 East Main Street, Bay Shore - PWGC performed a Phase I ESA at this former dry cleaning site which identified recognized environmental conditions. PWGC represented the prospective tenant during a subsurface investigation which determined that the site was impacted with chlorinated solvents and metals. The investigation included the sampling of stormwater and sanitary leaching pools, soil vapor sampling, and groundwater monitoring. A remedial excavation of contaminated leaching pools was performed. The site has been redeveloped into office space.
- Phase I & II ESA and Exploratory Excavation - 1984 Union Blvd, Bay Shore - PWGC performed a Phase I ESA at this automotive repair facility at which recognized environmental conditions were identified. PWGC represented the prospective buyer during a Phase II ESA which included a soil and groundwater boring program, a geophysical survey, and exploratory excavation. The investigation determined that a former Spill had been properly closed.
- Phase I & II - 75 West Aletta Place, Bay Shore - PWGC performed a Phase I ESA at this auto body shop at which recognized environmental conditions were identified. PWGC represented the prospective buyer in performing a Phase II ESA which included a geophysical survey, soil borings, and groundwater sampling. The investigation determined that the former on-site sanitary system was impacted with hazardous levels of lead. A remedial excavation of the impacted sanitary system was performed, which brought the site to SCDHS closure.
- Phase I ESA - 444 Lakeville Road, New Hyde Park - PWGC performed a Phase I ESA at this office building. The assessment did not identify recognized environmental conditions. PWGC did not recommend a Phase II ESA.
- Indoor Air Sampling - 1111 Marcus Avenue, Lake Success - PWGC performs quarterly indoor air sampling at this former industrial site which is impacted with chlorinated solvents. The air sampling is performed to confirm the effectiveness of the site's sub-slab depressurization system.



NORTHWELL HEALTH PROFESSIONAL CONSULTING SERVICES

CLIENT: NORTHWELL HEALTH

CONTACT: STEVE MARZO

SITE: MULTIPLE PATIENT CARE FACILITIES

PRINCIPAL: MAKSIM BEYGELMAN, PE, PROJECT MANAGER/MARIE MENDES, IE, PROJECT ENGINEER

PROJECT DESCRIPTION

PWGC and Northwell Health (Northwell) agreed on a five (5) year contract, term agreement from year 2013 through year 2018, to perform professional consulting services for 13 patient care facilities. PWGC assisted Northwell in managing federal, state, and local environmental compliance with regards to requirements set forth by:

- United States Environmental Protection Agency (USEPA)
- New York State Department of Environmental Conservation (NYSDEC)
- New York State Department of Health (NYSDOH)
- New York City Department of Environmental Protection (NYCDEP)
- Nassau County Department of Health (NCDOH)
- Nassau County Department of Public Works (NCDPW)
- Nassau County Fire Marshall (NCFM)
- Suffolk County Department of Health Services (SCDHS)
- Suffolk County Department of Public Works (SCDPW)
- Local water suppliers and local sewer districts

PWGC's ROLE

PWGC provides the following services to each of the 13 patient care facilities:

- Meet and coordinate with the hospital staff to perform monthly inspections of waste management and paperwork compliance.
- Create/update training plans and implement training according to compliance status.
- Amend/update existing contingency plans.
- Perform annual Tier II reporting for chemicals that are stored in quantities exceeding 10,000 pounds (New York City hospitals requirements are much lower and include numerous chemicals).
- Review permits and registrations of environmental concern and file for new or updated permits and registrations at least ninety (90) days in advance of dates of expiration for each of the hospitals.
- Continue to assist NSLIJ in managing environmental issues by keeping the hospitals up to date on new and upcoming regulations, policies, practices, guidelines, etc.
- Provide on-call assistance to North Shore-LIJ during regulatory agency inspections and emergencies such as spills and other environmental incidents.
- Prepare annual reports for Lenox Hill, North Shore University Hospital and LIJ. These three hospitals are Large Quantity Generators and are required to submit a hazardous waste annual report to the NYSDEC.
- Prepare semi-annual compliance reports for the Title V air permit.
- Provide assistance and support in legal defense, as needed.



NORTHWELL HEALTH TITLE V AIR PERMITTING

CLIENT: NORTHWELL HEALTH

CONTACT: JEFF SCOTT

SITE: LONG ISLAND JEWISH MEDICAL CENTER

PRINCIPAL: PAUL K. BOYCE, PE, PG, PRESIDENT/CEO, MARIE MENDES, IE, PROJECT ENGINEER

PROJECT DESCRIPTION

Title V air permitting services were provided for the Long Island Jewish Medical Center. PWGC reviewed applicable rules and regulations, such as, New Source Performance Standards (NSPS), Title V permitting, New Source Review/Prevention of Significant Deterioration Permitting, Maximum Achievable Control Technology (MACT), and Reasonably Achievable Control Technology (RACT).

PWGC provided an analysis of regulatory air laws and regulations and their applicability to cogeneration system emission sources. PWGC prepared a Title V Major Modification to permit the cogeneration engines and prepared applicable permits required by the New York City Department of Environmental Protection (NYCDEP). During the Title V application process, PWGC worked with the NYSDEC to provide LIJMC with nitrogen oxides (NOx) emission reduction credits (ERCs) for the decommissioning of 5 utility boilers and coordinated Stack Testing, which was required by newly established permit conditions.



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CARBON FOOTPRINT ANALYSIS

CLIENT: NORTHWELL HEALTH

CONTACT: MIKE ROHAN

SITE: MULTIPLE PATIENT CARE FACILITIES

PRINCIPAL: MARIE MENDES, IE, PROJECT ENGINEER



PROJECT DESCRIPTION

PWGC and Northwell Health (Northwell) agreed on a second five (5) year contract, term agreement from year 2016 through year 2020, to perform carbon footprint analyses for 15 patient care facilities. A baseline carbon footprint analysis was performed on each patient care facility to establish a baseline from which to measure the impact of future programs to reduce greenhouse gas emissions. Scope 1, 2 and 3 greenhouse gas emissions were calculated for each of the fifteen facilities using procedures established by the Climate Registry. Scope 1 emissions are from stationary and mobile combustion sources and refrigerants. Scope 2 emissions are from purchased electricity and heating and cooling sources of energy. Scope 3 emissions are from the disposal of wastes including regulated medical waste, municipal solid waste, paper and cardboard, etc.

PWGC's ROLE

- Performed calculations for direct and indirect emissions per California Climate Registry Greenhouse Gas Protocols for Scope 1 and Scope 2 emissions. Scope 3 emissions were calculated to the extent possible based on available data
- Prepared a letter report with the baseline carbon footprint analysis which included calculations and graphs demonstrating the percentage of greenhouse gas emissions per activity for the dedicated baseline calendar year
- Provided summary sheets and pie charts to demonstrate the greenhouse gas impact areas as well as summary tables comparing the different facilities
- Baseline data was normalized by dividing the mass of carbon dioxide equivalents by common measures of the size of the facilities. This included building square footage, number of beds and number of occupied bed equivalents

NORTHWELL HEALTH GEOTHERMAL WELL SYSTEM DESIGN & CONSTRUCTION OVERSIGHT

CLIENT: NORTHWELL HEALTH

CONTACT: ALFONSO LAFEMINE, DIRECTOR OF ENGINEERING

SITE: GLEN COVE, NY

PRINCIPAL: PAUL K. BOYCE, PE, PG, PRESIDENT/CEO

PROJECT DESCRIPTION

Design and construction of an 800-gpm open loop groundwater heat pump system in compliance with NYSDEC regulations to augment the existing systems that supply cooling to 11 buildings on the 10.3 acre campus.

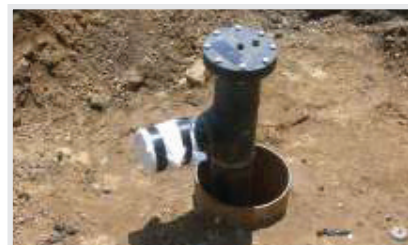
PWGC's ROLE

- Conducted and documented a feasibility study
- Developed design and construction specifications for the geothermal well system, detailing an open-loop groundwater supply and recharge well system with inter-connecting process piping
- Coordinated well permits documentation, prepared Long Island Well Permit and Engineering Report
- Developed a project implementation strategy
- Oversaw project execution and administered field activities

To determine the extent of the proposed upgrade and expansion of existing air-cooling system:

- Investigated and determined best-suited size and location of the new wells
- Modeled the effects of the proposed system on existing wells
- Prepared construction cost estimates
- Developed project designs and strategy to address unique site challenges
- Prepared a comprehensive engineering report and well permit in accordance with NYSDEC regulations.
- Sized the various system components, and coordinated with other project consultants to route piping, and locate process equipment.

Based on analysis of hydraulic, economic, and hydrogeologic aspects, PWGC determined that the system's expansion would be feasible, and that the construction would not significantly disrupt the hospital's day-to-day operations. PWGC designed and oversaw an extensive field testing program to verify aquifer parameters and modeling results, as well as demonstrate that the proposed system would not hydraulically influence a nearby superfund site. Additionally as part of this project, PWGC oversaw the rehabilitation of two existing open loop geothermal systems that supplied cooling to the bulk of the campus.



NORTHWELL HEALTH 500-YEAR FLOODPLAN ANALYSIS

CLIENT: NORTHWELL HEALTH, FORMERLY NORTH SHORE LIJ

CONTACT: JESSE FRANCO, PROJECT MANAGER

SITE: STATEN ISLAND, NY

PRINCIPAL: PAUL K. BOYCE, PE, PG, CEO/PRESIDENT

PROJECT DESCRIPTION

Prepare a 500-year floodplain analysis for a proposed healthcare building located outside of the 100-year flood zone and in the Area of Minimal Flood Hazard. The analysis was completed as per the request of the New York State Department of Health (NYSDOH).

PWGC's ROLE

- Reviewed site information provided by the building manager,
- Compared proposed site grades to existing site grades and to adjacent areas,
- Calculated the approximate 500-year floodplain elevation, Developed a figure depicting the extents of a 500-year flood in the site vicinity,
- Prepared a letter report stating the findings of the analysis and how the site will be affected.

To determine the extent of the 500-year floodplain:

- Researched and determined the nearest adjacent 100-year flood zone area,
- Analyzed the surrounding areas topography in relation to the site,
- Coordinated with the site surveyor on the surveys provided and the elevation datum.

PWGC determined that the subject site is located adjacent to a site that is in Flood Zone X, 0.2 Percent Annual Chance Flood Hazard, which is more commonly known as the 500-year flood zone. Utilizing this information and the nearest adjacent 100-year flood zone elevation, the 500-year flood zone elevation was determined. The extent of the 500-year floodplain was then mapped and it was determined that the site is located outside of this area, with the elevation of the first floor above the 500-year flood elevation.



NORTHWELL HEALTH STORMWATER DRAINAGE ANALYSIS

CLIENT: NORTHWELL HEALTH

CONTACT: MICHAEL ROHAN

SITE: SOUTHSIDE HOSPITAL, BAY SHORE, NY

PRINCIPAL: PAUL K. BOYCE, PE, PG, PRESIDENT/CEO

PROJECT DESCRIPTION

As a result of the August 12-13, 2014 historic storm, Northwell Health's Southside Hospital retained PWGC to conduct a study to evaluate the existing drainage infrastructure and to make recommendations on how to alleviate future flooding at Southside Hospital.

PWGC's ROLE

An analysis of the hospital's drainage system was performed, taking into account the historic rain event that took place on August 12-13, 2014. Because the 500-year storm slightly exceeds the August 13, 2014 storm, this event is considered as the basis for the current analysis. Recommendations were made including: refurbishing two existing, non-functioning pump stations; replacing and installing new stormwater pipe; installing 1,500 concrete leaching galleys; installing overflow pipe to Penataquit Creek; installing an overflow pipe to discharge stormwater to a public road during extreme rain events; and install five (5) additional catch basins, seven (7) additional manholes, and two (2) pump stations to capture stormwater and pump to leaching galleys.

The project is located in an area of high ground water and adjacent to Penataquit Creek. As a result, there was limited space available to store and treat groundwater on site. Therefore, coordination with the Town of Islip and the NYSDEC was required to determine acceptable on-site stormwater treatment, and ultimately to discharge overflow stormwater to Penataquit Creek.



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NORTHWELL HEALTH NYSDOH CERTIFICATE OF NEED, SCHEDULE 7


CLIENT: NORTHWELL HEALTH
CONTACT: MICHAEL ROHAN
SITE: SOUTHSIDE HOSPITAL, BAY SHORE, NY
PRINCIPAL: PAUL K. BOYCE, PE, PG, CEO/PRESIDENT

PROJECT DESCRIPTION

Complete the New York State Department of Health (NYSDOH) Certificate of Need (CON) Schedule 7 Environmental Assessment to support various projects. The CON Schedule 7 was completed as per the request of the NYSDOH.

PWGC's ROLE

- Reviewed project information
- Coordinated with individual site project managers regarding the project scope
- Researched FEMA flood zone data in regards to the individual site locations
- Researched designated evacuation zones in the area surrounding the individual site locations
- Compared the project scope and design in regards to Hurricane Lee, and or Irene, and Superstorm Sandy mitigation standards
- Assisted in obtaining a FEMA Elevation Certificate
- Completed the CON Schedule 7 form including information specific to Storm and Flood Mitigation



ELEVATION CERTIFICATE
 FEDERAL EMERGENCY MANAGEMENT AGENCY
 IMPORTANT: Follow the instructions on pages 3-9.

OMB No. 1560-0009
 Expiration Date: July 31, 2019

SECTION A - PROPERTY INFORMATION

A1. Building Owner's Name: _____

A2. Building Street Address (including Apt., Unit, Suite, and/or Sldg. No.) or RD, Route and Box No.: _____
 City: _____ State: _____ ZIP Code: _____

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.): _____

A4. Building Use (e.g., Residential, Non-Residential, Apartment, Business, etc.): _____

A5. Lot/Block/Tract/Parcel: Lot _____ Long _____ Horizontal Distance: NAD 83/ET NAD 83/SS

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Design Number: _____

A8. For a building with an attached garage:
 a) Square footage of attachment or enclosure(s) _____ sq ft
 b) Number of openings of attachment or enclosure(s) within 1.0 foot above adjacent grade _____ sq ft
 c) Total net area of flood openings in A8.b _____ sq ft
 d) Engineered flood openings? Yes No

A9. For a building with an attached garage:
 e) Square footage of attached garage _____ sq ft
 f) Number of openings of flood openings in the attached garage within 1.0 foot above adjacent grade _____ sq ft
 g) Total net area of flood openings in A9.f _____ sq ft
 h) Engineered flood openings? Yes No

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. FIRM Community Name & Community Number: _____ B2. County Name: _____ B3. Sheet: _____

B4. Map/Firm Number: SEC: _____ DD: FIRM Issue Date: _____ ET: FIRM (Firm Edition)/Previous Date: _____ B5. Flood Zone(s): _____ B6. Base Flood Elevation(s) (One AG and base flood depth): _____

B7. Indicate the source of the Flood Elevation (FE) data or base flood depth amount in Item B6:
 FIRM Profile FIRM Determinately Determined Other/Source: _____

B8. Indicate elevation datum used for FE in Item B6: NAVD 1989 NAVD 1988 Other/Source: _____

B9. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? Yes No
 Designation Date: _____ CBRS OPA

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: Construction Drawings* Building Under Construction* Finished Construction
 *As new Elevation Certificates will be required when construction of the building is complete.

C2. Elevation - Zones A1-A30, AC, AE, A (with BFE), AL, V1-V22, V (with BFE), AH, AH/A, AH/AC, AH/A1-A30, AH/H, AR/AE, Complete Items C2 a-h below according to the building diagram specified in Item A.1. In Paren to floor only, enter meters.

Benchmark utilized: _____ Vertical Datum: _____
 Indicate elevation datum used for the elevations in Items a) through h) below: NAVD 1989 NAVD 1988 Other/Source: _____
 Datum used for building elevations must be the same as that used for the BFE. Check the measurement used:

a) Top of bottom floor (including basement, mezzanine, or entrance floor) _____ feet meters
 b) Top of the next higher floor _____ feet meters
 c) Bottom of the lowest horizontal structural member (V Zones only) _____ feet meters
 d) Highest garage (top of slab) _____ feet meters
 e) Lowest elevation of machinery or equipment servicing the building (Specify type of equipment and location in Comments) _____ feet meters
 f) Lowest adjacent (finished) grade next to building (LAG) _____ feet meters
 g) Highest adjacent (finished) grade next to building (HAG) _____ feet meters
 h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support _____ feet meters



WINTHROP UNIVERSITY HOSPITAL ENVIRONMENTAL COMPLIANCE CONSULTING & SERVICES

CLIENT: WINTHROP UNIVERSITY HOSPITAL

CONTACT: DANIEL ABBRUZZESE

SITE: MINEOLA, NY

PRINCIPAL: GARY MAZZA, SR. VICE PRESIDENT

PROJECT DESCRIPTION

Develop a Spill Prevention Control & Countermeasure (SPCC) Plan, and assist in modifying a permit to operate a boiler.

PWGC's ROLE

- Prepared the required SPCC Plan per Title 40 of The USEPA Code of Federal Regulations, Part 112 (40 CFR 112)
- Coordinated stack emissions testing of the boiler and used results to determine the annual facility-wide NOx emissions

In the event that emissions:

- A. Do not exceed the limits indicated in the NYSDEC permit to operate the boiler, PWGC would assist Winthrop to petition the NYSDEC to modify the permit (The modification would have consisted of an increase in annual volume of No. 2 fuel oil that Winthrop would be permitted to burn).
- B. Exceed the specified NYSDEC limits, PWGC would develop and identify alternatives for achieving the required NOx limits.



PWGC conducted a facility visit with appropriate Winthrop personnel, interviewed pertinent operations personnel, and collected relevant site documentation (i.e. list of chemicals in use at the facility and the current site plan.)

PWGC used its findings and existing records to prepare the SPCC Plan in accordance with 40 CFR 112.

PWGC coordinated the emissions testing and used the results to calculate the boiler's estimated annual NOx emissions to ensure they did not exceed Winthrop's permit limits.

PWGC determined that Winthrop is in compliance with the 40 CFR 112 and was successful in the process of petitioning the NYSDEC for a permit modification to increase the annual volume of No. 2 fuel oil that the facility may burn annually.



GOOD SAMARITAN HOSPITAL ENGINEERING & ENVIRONMENTAL COMPLIANCE

CLIENT: CATHOLIC HEALTH SYSTEM

CONTACT: RICHARD BIE

SITE: GOOD SAMARITAN HOSPITAL, WEST ISLIP, NY

PRINCIPAL: PAUL K. BOYCE, PE, PG, CEO/PRESIDENT

PROJECT DESCRIPTION

PWGC was tasked with assisting the Good Samaritan Hospital Medical Center with Lead & Copper Corrosion Control Treatment in order for the hospital to maintain their on-site water well for the hospital's potable water supply needs.

PWGC performed extensive RTW desktop studies to calculate treated water corrosion indexes and found that pH adjustment utilizing calcium carbonate (lime) would likely be a more effective Corrosion Control Treatment (CCT) due to lime treatment's ability to increase the on-site well water's hardness, buffering and acid neutralization properties.

Approval from the local Health Department was granted to perform a six-month pilot study using available public water supply treated with lime in the hospital plumbing system to determine the effectiveness of CCT utilizing calcium carbonate versus sodium hydroxide and ortho-phosphate.

The results of the six-month pilot study indicated that lime treatment of the on-site potable well water supply was a viable CCT and would likely enable the hospital to maintain operation of its on-site well in compliance with current local health, state and federal standards and regulations.

PWGC initiated the start-up of a three month liquid calcium hydroxide (LCH) water treatment pilot test at the hospital. The LCH treatment system was proposed for use to address the physical site constraints posed by the on-site well's location within the hospital near administrative offices, making use of powdered lime and slaking undesirable. The successful installation of an approved LCH treatment system at the hospital was the first of its kind in Suffolk County.



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ST. CHARLES HOSPITAL ENGINEERING & ENVIRONMENTAL COMPLIANCE

CLIENT: CATHOLIC HEALTH SYSTEM

CONTACT: HARRY RADENBERG

SITE: ST. CHARLES HOSPITAL

PRINCIPAL: PAUL K. BOYCE, PE, PG, CEO/PRESIDENT

PROJECT DESCRIPTION

PWGC was tasked with completing a State Permit Discharge Elimination System (SPDES) application for submission to the New York State Department of Environmental Conservation (NYSDEC) for boiler and cooling tower blowdown discharge at St. Charles Hospital.

As a result of the NYSDEC requiring a decrease in proposed chemical discharge for specific unregulated proprietary chemicals, beyond what WTC manufacturer has recommended for minimal equipment protection, PWGC was tasked with looking to alternative methods.

PWGC initiated a non-chemical water treatment pilot test of one of the hospital's cooling tower units. If successful, this non-chemical treatment of the hospital's cooling tower makeup waters utilize new technology to alleviate a portion of the hospital's burden of maintaining a NYSDEC SPDES permit.

PWGC is also performing a water conservation study of the hospital's implementation of water conserving measures to reduce the volume of waste water that is directed to the local sewage treatment plant.



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PROVIDENCE EVERETT MEDICAL CENTER PHARMACEUTICAL WASTE PROFILE

CLIENT: PROVIDENCE EVERETT MEDICAL CENTER

CONTACT: GILBERT BODRAK

SITE: MULTIPLE PATIENT CARE FACILITIES

PRINCIPAL: ALAN JONES, PHD, DIRECTOR OF HEALTHCARE COMPLIANCE

PROJECT DESCRIPTION

Prepare a Pharmaceutical Waste Profile as one component of compliance with Washington Department of Ecology's *Interim Enforcement Policy: Pharmaceutical Waste Management in Health Care*.

PWGC's ROLE

- Collect approximately 50 gallons of pharmaceutical waste from multiple generation locations around the hospital including surgery, pharmacy, med/surg. floors, endoscopy and others.
- Open, pour out and physically survey the name and content volume of each tube, vial, ampoule, IV bag or syringe of pharmaceutical waste.
- Designate each waste according to either federal hazardous, or state dangerous waste code and sum the total weight/volume of pharmaceutical waste for each waste code.
- Repeat this process for three separate batches of pharmaceutical waste over at least three months' time (to account for seasonal differences in types of waste).
- Analyze the waste code volumes for each batch, compiling a statistical perspective of the maximum and minimum proportions of a representative batch of pharmaceutical waste that each waste code could conceivably comprise.
- Prepare a Pharmaceutical Waste Profile (a generic pharmaceutical waste manifest) for the client that can be sent to Washington's department of Ecology as one component of compliance with the *Interim Enforcement Policy*.



PROVIDENCE EVERETT MEDICAL CENTER WASTE MANAGEMENT CONSULTING

CLIENT: PROVIDENCE EVERETT MEDICAL CENTER

CONTACT: GILBERT BODRAK

SITE: MULTIPLE PATIENT CARE FACILITIES

PRINCIPAL: ALAN JONES, PHD, DIRECTOR OF HEALTHCARE COMPLIANCE

PROJECT DESCRIPTION

Provide specific waste management consulting services.

PWGC's ROLE

- Survey the facility for dangerous waste streams and volumes, designating dangerous waste
- Survey the facility's waste streams including solid, regulated medical, dangerous, universal, special, pharmaceutical and radioactive
- Perform formaldehyde exposure baseline assessments
- Prepare hazardous material and waste management plans
- Prepare chemical hazard communication plans
- Prepare hazardous drug control plans
- Conduct hazardous drug exposure training
- Designate waste streams, including laboratory instrument effluent
- Prepare Dangerous Waste Annual Reports
- Compile Pollution Prevention Plan annual updates
- Conduct dangerous waste management personnel training
- Perform construction and demolition audits
- Respirator fit-testing
- Prepare pharmaceutical waste management plans



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PROVIDENCE EVERETT MEDICAL CENTER HAZMAT EMERGENCY RESPONSE TRAINING

CLIENT: PROVIDENCE EVERETT MEDICAL CENTER

CONTACT: ED MICAS

SITE: MULTIPLE PATIENT CARE FACILITIES

PRINCIPAL: ALAN JONES, PHD, DIRECTOR OF HEALTHCARE COMPLIANCE

PROJECT DESCRIPTION

Conduct basic and annual refresher hazardous material emergency response training according to Washington Department of Labor & Industries' *Emergency Response Standard, WAC 296-824*.

PWGC's ROLE

- Conduct 8-hr basic hazmat emergency response training for Code Orange Team staff at each hospital to respond to spills and releases. Training includes:
 - Basic steps in hazmat spill response
 - Recognizing a hazardous material spill
 - Interpreting a Safety Data Sheet
 - Recognizing common hazmat exposure vectors (inhalation, ingestion, contact, injection)
 - Interpreting GHS, HMIS, NFPA, DOT and UN hazard labels
 - Neutralizing formalin spills
 - Cleaning up hazmat spills
 - Disposal of cleanup debris
 - Recordkeeping
 - Notification of governmental agencies for especially large or toxic spills
 - Use of the Emergency Response Guide
- Conduct 2-hr annual refresher training in the competencies required for hazmat emergency response. Training includes:
 - Tabletop exercises
 - Review of emergency response competencies
 - Review of how to interpret Safety Data Sheets



PROVIDENCE EVERETT MEDICAL CENTER HAZMAT SURVEY

CLIENT: PROVIDENCE EVERETT MEDICAL CENTER

CONTACT: ED MICAS

SITE: MULTIPLE PATIENT CARE FACILITIES

PRINCIPAL: ALAN JONES, PHD, DIRECTOR OF HEALTHCARE COMPLIANCE

PROJECT DESCRIPTION

Survey the facility for hazardous materials; i.e., materials that are flammable, corrosive, toxic, reactive, carcinogenic, asphyxiants, cryogens, oxidizers, or combustible. Note product name; primary hazard; secondary hazard; primary, secondary and tertiary hazardous constituents; primary and secondary hazardous constituent proportions in the product; department; location within the department; manufacturer; size of product container, number of containers. Create a relational database (Microsoft ACCESS) with a master table of products, table of departments, table of hazards, and table of hazardous constituents. Create reports of hazardous materials in each department, then export those reports to a Microsoft Excel workbook for managers and staff who don't have ACCESS or are unfamiliar with it.



PWGC's ROLE

- Survey the facility's departments room-by-room, closet-by-closet, drawer-by-drawer.
- Document products that designate as hazardous materials and note the information for each record described above
- Build a Hazardous Material Inventory for the client with customized reports for each department, each hazard, and the facility as a whole.
- Provide additional customized reports for the client. For example, all the areas in a facility where corrosive products are stored in order to insure that an eyewash station is within 50 feet of each storage area containing a corrosive product.



HAZMAT EMERGENCY RESPONSE TRAINING

CLIENT: SWEDISH HEALTH SERVICES

CONTACT: MICHAEL SMITH

SITE: MULTIPLE PATIENT CARE FACILITIES

PRINCIPAL: ALAN JONES, PHD, DIRECTOR OF HEALTHCARE COMPLIANCE

PROJECT DESCRIPTION

Waste and hazardous material management consulting services for the system's five hospitals and two urgent care centers. Assist with regulatory compliance according to:

- Washington Department of Ecology
- Washington Department of Labor & Industries
- City of Edmonds Wastewater Treatment Plant
- King County Fire Marshal
- King County Department of Health
- King Department of Natural Resources, Local Hazardous Waste Management Program
- Snohomish County Department of Health
- Snohomish County Fire Marshal
- The Joint Commission
- Det Norske Veritas (DNV)

PWGC's ROLE

- Conduct regular facility surveys of dangerous waste management practices
- Prepare the hospitals' Dangerous Waste Annual Reports
- Prepare the hospitals' Pollution Prevention Plan annual updates
- Meet regularly with the hospital's Waste & Hazardous Materials Management Committee
- Provide regular formaldehyde exposure baseline assessments
- Conduct basic and annual hazmat emergency response training for Code Orange teams
- Prepare facility wastewater discharge permit applications when needed
- Prepare facility spill prevention and containment plans
- Prepare and annually update the hospital system's Hazardous Material Inventory
- Prepare and annually update the hospital system's Hazardous Material & Waste Management Plan
- Prepare hospitals' Pharmaceutical Waste Profiles
- Assess and prepare laboratory instrument waste effluent designations to corroborate the composition of laboratory instrument waste streams that are plumbed directly to the sewer
- Conduct hazardous drug exposure training
- Prepare hazardous drug control plans

