

SHEAFFER INTERNATIONAL, L.L.C.

Wastewater Reclamation & Reuse Systems

Statement of Qualifications



Corporate Headquarters
800 Roosevelt Road
Suite B-214
Glen Ellyn, IL 60137
Phone: 630.446.4080
Fax: 630.446.4085

Nashville Area Office
1551 Thompson's Station Road West
P.O. Box 147
Thompson's Station, TN 37179
Phone: 615.261.8600

www.sheafferinternational.com



Wastewater Reclamation & Reuse Systems

~ *Statement of Qualifications* ~

TABLE OF CONTENTS

Who We Are	1
Our Philosophy	2
Achieving Our Philosophy	3
Introduction to the Sheaffer System.....	4
Benefits of the Sheaffer System	5
Case Studies.....	6
Our Services.....	18
Client Testimonials	19
References.....	21



Wastewater Reclamation & Reuse Systems

~ *Statement of Qualifications* ~

WHO WE ARE

SHEAFFER INTERNATIONAL, LLC is an environmental development company focused in the area of water and wastewater treatment and reuse.

We seek to help our clients maximize land value and preserve environmental resources by providing innovative solutions in water and wastewater management.

Our systems are cost-effective, and provide environmental benefits unmatched by anyone in the industry.



Wastewater Reclamation & Reuse Systems

~ *Statement of Qualifications* ~

OUR PHILOSOPHY

WE BELIEVE that environmental stewardship and successful economic growth can be in complete harmony with one another.

WE BELIEVE that reclaiming and beneficially reusing wastewater is the best solution for the Municipality, the Developer, the Homeowner, and most importantly, the Environment.

FINALLY, WE BELIEVE in working together with our clients to achieve their goals—not just from an engineering perspective, but from a holistic project development perspective.



Wastewater Reclamation & Reuse Systems

~ *Statement of Qualifications* ~

ACHIEVING OUR PHILOSOPHY

OUR YEARS OF EXPERTISE in the industry have led us to our patented wastewater treatment system design. “Sheaffer Systems®” do not discharge to surface waters, nor do they produce sludge or nuisance odors. Instead, wastewater is recycled and beneficially re-used.

OUR STRATEGY of development enables cost-effective, sustainable growth. We supply municipalities and developers with tangible incentives to protect the environmental resources of the region.



Wastewater Reclamation & Reuse Systems

~ *Statement of Qualifications* ~

INTRODUCTION TO THE SHEAFFER SYSTEM®

THE SHEAFFER SYSTEM® reclaims wastewater in a series of deep, aerated ponds. The ponds, or “cells”, typically provide 36 days of aerobic (high O₂) treatment, after which the reclaimed water is filtered and disinfected prior to irrigation. A variety of irrigation methods and treatment variations may be employed, depending on the project. For systems utilizing spray irrigation, capacity is provided to store water with no effluent release during the winter, or non-irrigation season.



*Fields of Long Grove Sheaffer System
Long Grove, IL*

Key benefits of the Sheaffer System®

- No discharge to surface waters
- No odor
- No sludge
- Natural appearance
- Adds value to property
- Serves 1,000 gallons per day to over 3 million gallons per day
- Eligible for LEED points

The Sheaffer System® is a patented technology with over 25 years of successful operation and customer satisfaction.



Wastewater Reclamation & Reuse Systems

~ Statement of Qualifications ~

THE BENEFITS OF THE SHEAFFER SYSTEM®

A TRULY UNIQUE SOLUTION, the Sheaffer System® offers a host of environmental and economic benefits that distinguish our system from all others:

- **No discharge to surface waters**
Protecting the water quality of streams, lakes, wetlands, and wildlife habitats
- **No odors**
Preserving the natural ambience of the development
- **No sludge**
Avoiding high costs of regular maintenance procedures (typically one-third of annual budget for traditional wastewater treatment facility)
- **Reclaims wastewater on-site**
Recharging local groundwater resources with clean, reclaimed water
- **Recycles nutrients**
Maintaining healthy landscaping balance while encouraging plant growth
- **Increases property values**
Providing natural settings for homes, without having to deal with septic systems, by achieving higher density
- **Requires few moving parts**
Significantly decreasing operational costs and promoting facility longevity



Wastewater Reclamation & Reuse Systems

~ *Statement of Qualifications* ~

CASE STUDIES

RESIDENTIAL and COMMERCIAL DEVELOPMENTS

Baywood	Long Neck, DE
Fields of Long Grove	Long Grove, IL
Fox Mill	Wasco, IL
Heritage Commons	Thompson's Station, TN
Mill Creek	Geneva, IL
Saddlebrook Farms	Round Lake Park, IL
Willowmere	South Barrington, IL
Wynstone	North Barrington, IL

MUNICIPAL

Cortland, IL	DeKalb County, IL
Thompson's Station, TN	Williamson County, TN

INDUSTRIAL

ADL I Hog Farm	Clarke County, IA
Duke Energy Corporation	Blacksburg, SC



Wastewater Reclamation & Reuse Systems

~ SOQ Case Studies ~

BAYWOOD

✓ Residential

Municipal

Industrial



OPERATING SINCE: 2000
RESIDENTIAL UNITS: 369 (Expanding to 3,750)
AVERAGE FLOW: 59,000 GPD (Expanding to 600,000 GPD)
IRRIGATED AREA: 13.8 acres (Area of expansion to be designed)

Located in the beautiful Rehoboth Beach area of Delaware, Baywood is a full-service, public golf course and residential community. The Sheaffer System treats wastewater from the community and the clubhouse, and the reclaimed water is used to irrigate the golf course. Sheaffer International is currently designing an expansion of this system to accommodate expansion of the community and the golf course. See <http://www.baywoodgreens.com/> for more information about the community.



Wastewater Reclamation & Reuse Systems

~ SOQ Case Studies ~

FIELDS OF LONG GROVE

✓ Residential

Municipal

Industrial



OPERATING SINCE: 1986
RESIDENTIAL UNITS: 87
AVERAGE FLOW: 33,000 GPD
TOTAL AREA: 160 acres
IRRIGATED AREA: 10 acres
FACILITY FOOTPRINT: 3 acres

Recipient of the
“Best in American Living Award”
recognized in *Better Homes &
Gardens* magazine.

The 109 acres of open space preserved on the property serves as woodland, field, wildfowl ponds, wetlands, and restored native wildflower prairie. Backyards of the large homes on small lots open onto large green spaces. Natural swales, ponds, and re-created wetlands replace pipes for stormwater management.



Wastewater Reclamation & Reuse Systems

~ SO₂ Case Studies ~

FOX MILL

✓ Residential

Municipal

Industrial



OPERATING SINCE:	1993
RESIDENTIAL UNITS:	730
AVERAGE FLOW:	316,000 GPD
TOTAL AREA:	737 acres
IRRIGATED AREA:	81 acres
FACILITY FOOTPRINT:	16 acres

Reclaimed water, with its dissolved nutrients, is beneficially reused to irrigate and fertilize open space on the Fox Mill site. The discharge of pollutants into Mill Creek is eliminated with the Sheaffer System™, assuring long-run compliance with Illinois standards.



Wastewater Reclamation & Reuse Systems

~ SOQ Case Studies ~

HERITAGE COMMONS

✓ Commercial

Municipal

Industrial



OPERATING SINCE:	2005
EQUIVALENT DWELLING UNITS:	730
AVERAGE FLOW:	30,000 GPD
TOTAL FOOTPRINT AREA:	5 acres

Heritage Commons is a retail shopping center developed by Southstar Development in Thompson's Station, Tennessee. Sheaffer International designed the system for Southstar and now operates the facility for the Town of Thompson's Station. Wastewater is treated in the aerated cells, stored, filtered through a disc media filter, disinfected, and spray irrigated to open space on the property.



Wastewater Reclamation & Reuse Systems

~ SO₂ Case Studies ~

MILL CREEK

✓ Residential

Municipal

Industrial



OPERATING SINCE:	1994
RESIDENTIAL UNITS:	1,822
AVERAGE FLOW:	650,000 GPD
TOTAL AREA:	1,374 acres
DEVELOPED AREA:	824 acres
OPEN SPACE:	550 acres

**Recipient of the “Landscape
Planning & Analysis Award”**
*Illinois Chapter, American Society of
Landscape Architects*

The Mill Creek Development in Geneva, IL, successfully preserved 40% open space on its property by centralizing its high density areas within the interior of the site. Golf links and tall prairie grasses intertwine to create a beautiful landscape for the homeowners at Mill Creek. By eliminating the need for septic systems, the Mill Creek Sheaffer System™ lies at the heart of these amenities.



Wastewater Reclamation & Reuse Systems

~ SO₂ Case Studies ~

SADDLEBROOK FARMS

✓ Residential

Municipal

Industrial



OPERATING SINCE:	1987
RESIDENTIAL UNITS:	3,800
AVERAGE FLOW:	595,000 GPD
TOTAL AREA:	700 acres
IRRIGATED AREA:	120 acres
FACILITY FOOTPRINT:	17 acres

Reclaimed water from the Saddlebrook Farms Sheaffer System is beneficially reused as irrigation for the adjacent 159-acre farm. In addition, an ecologically-sound stormwater management system designed by Sheaffer—with a network of shallow grassy swales and stormwater detention areas—stores, filters, and treats polluted urban runoff on-site.



Wastewater Reclamation & Reuse Systems

~ SOQ Case Studies ~

WILLOWMERE

✓ Residential

Municipal

Industrial



OPERATING SINCE:	1989
RESIDENTIAL UNITS:	54
AVERAGE FLOW:	19,000 GPD
TOTAL AREA:	132 acres

The homes at Willowmere are situated around a central open space that includes lakes, natural wetlands, and parks. Reclaimed water is filtered in two sand beds prior to irrigation to soccer fields, where the nutrients from the reclaimed water nourish the nearly five acres of grass.



Wastewater Reclamation & Reuse Systems

~ SOQ Case Studies ~

WYNSTONE

✓ Residential

Municipal

Industrial



OPERATING SINCE:	1987
RESIDENTIAL UNITS:	540
AVERAGE FLOW:	189,000 GPD
TOTAL AREA:	867 acres
IRRIGATED AREA:	76 acres
FACILITY FOOTPRINT:	7 acres



Wynstone is a Jack Nicklaus-designed golf course community in North Barrington, IL. The reclaimed water from the Wynstone Sheaffer System is mixed with fresh water and used to irrigate the golf course. Homeowners adjacent to the reclamation cells testify to the fact that the system is odorless. Ducks (pictured above) seem to particularly enjoy the ponds at Wynstone.



Wastewater Reclamation & Reuse Systems

~ SO₂ Case Studies ~

THOMPSON'S STATION, TN

Residential

✓ Municipal

Industrial



AVERAGE FLOW: 1.3 MGD (3,714 residential units)

OPERATING SINCE: 2007

IRRIGATION AREA: 130 acres

Historically a small rural community south of Nashville, Thompson's Station was growing and needed a wastewater treatment solution. The town and local developers chose the Sheaffer System for its environmental benefits and cost-effectiveness. Sheaffer International worked with both the Town and developers to design and construct a system that meets their needs, by making the system expandable for future growth. Sheaffer International also operates the facility for the Town.



Wastewater Reclamation & Reuse Systems

~ SOQ Case Studies ~

CORTLAND, ILLINOIS

Residential

✓ Municipal

Industrial



OPERATING SINCE: 2007
AVERAGE FLOW: 1.5 MGD
(4,826 residential units)

**Recipient of the
2007 Innovation Award**
Illinois Municipal League

In 2003 the Town of Cortland found that its sewage infrastructure had reached capacity, hindering desired, future growth. After careful research of its options, Cortland contracted with Sheaffer International to Design-Build-Operate a Sheaffer System to serve its planned capacity needs. Of the 1.5 MGD design flow, 0.3 MGD reflects the existing town, with approximately 1.2 MGD of planned growth. Developers in town are providing open space irrigation, and the town will also irrigate a farm property with the reclaimed water.



Wastewater Reclamation & Reuse Systems

~ SO₂ Case Studies ~

ADL I HOG FARM

Residential

Municipal

✓ Industrial



OPERATING SINCE: 1998
AVERAGE FLOW: 90,000 GPD
IRRIGATION AREA: 56 acres

The Sheaffer System serving the ADL I Hog Farm in Clarke County, Iowa demonstrates how Sheaffer's environmentally-sound technology is a great fit for advanced agribusiness processes. The expedited manure handling achieved by the Sheaffer System protects not only the local water resources from contamination, but the health of animals as well. The aeration system mitigates odors from the hog farm operation.



Wastewater Reclamation & Reuse Systems

~ SO₂ Case Studies ~

DUKE ENERGY—MILL CREEK STATION

Residential

Municipal

✓ Industrial



OPERATING SINCE: 2002
AVERAGE FLOW: 2,000 GPD Wastewater,
Plus Peak R/O Reject Water Capacity of 6,000,000 gallons
IRRIGATION AREA: 5 acres

This Sheaffer System treats wastewater from Duke Energy's Mill Creek Combustion Turbine (CT) Station, which is an electrical power "peaker" plant in Blacksburg, SC. In addition to treating wastewater, the Sheaffer System stores and treats water from the reverse osmosis unit (R/O) used to power the turbines for the facility. The reclaimed water is spray irrigated to open space on the property. Sheaffer is currently designing an expansion for the facility.



Wastewater Reclamation & Reuse Systems

~ Statement of Qualifications ~

OUR SERVICES

TO PROVIDE OUR CLIENTS with appropriate solutions to their unique wastewater management needs, Sheaffer International offers a variety of services:

- Feasibility Study
A preliminary evaluation of the suitability of your property for a Sheaffer System™
- Basis of Design Engineering Report
Provides a conceptual design meeting the requirements of state environmental agencies
- Design and Construction Documents
Comprehensive engineering design documents for state approval and construction.
- Permit Applications
Secures state and local government approval to construct and operate the Sheaffer System™
- Operations & Maintenance Manual
A comprehensive guide to help you successfully operate your Sheaffer System™
- Project Financing
Sheaffer can help provide you with innovative, cost-saving financing solutions
- Construction Oversight
Bid assistance and periodic construction inspection
- Facility Management and Operations
Sheaffer offers a number of potential options to help you successfully operate the system, including system ownership and lease options.



Wastewater Reclamation & Reuse Systems

~ *Statement of Qualifications* ~

CLIENT TESTIMONIALS

“We’re proud that Copperleaf will install the first Sheaffer System in the State of Wyoming. The Sheaffer System gives new meaning to the term ‘catch and release,’ because it catches wastewater, cleans it, and releases the treated water to be used again—100% on-site.”

**Bob Kudelski, President, The Worthington Group of Wyoming,
Developer of the Copperleaf residential development near Cody, Wyoming**

“The land treatment-based reclamation/reuse system being established by Cortland, IL, appears to be a model project for providing wastewater treatment capacity to accommodate rapid growth that is privately financed by the new development. In this case, by incorporating nutrient recycling as a part of the treatment system, they also avoid adding nutrients to the Illinois streams and rivers that would be associated with the discharge from a more conventional approach to wastewater treatment.”

**Robert K. Bastian, Senior Environmental Scientist
U.S. EPA, Office of Wastewater Management, Washington, D.C.**

“These systems, when properly designed, constructed and operated, do not smell, do not disperse pathogens, are not unsightly, are cost-effective, recycle water and nutrients, and eliminate point source discharges.”

Phillip S. Bus, Executive Director, Kane County Development

“I’m sure you will be very proud to know that The Fields of Long Grove has been awarded The Best in American Living Award for the East North Central Region of the country, and that you were part of the team that made this award possible.”

Jack Foreman, Project Manager, Fields of Long Grove Sheaffer System

“For approximately three years... we have done a lot of research on alternative sewer systems. We found the Sheaffer System to absolutely be the best option out there. We know we are the first of many developments that will be approved in the Nashville area and around the State using the Sheaffer System.”

**Glenn Wilson, Chief Manager, Southstar Development, L.L.C,
Developer of the Heritage Commons commercial center in Thompson’s Station, Tennessee**



Wastewater Reclamation & Reuse Systems

~ *Statement of Qualifications* ~

CLIENT TESTIMONIALS

“The project now includes a beautiful hotel, 15 office buildings, including one 27 story building, 7 man-made lakes and is altogether a beautiful park-like setting that includes paved walks, small bridges and outdoor patio dining for some of the offices. There has been no complaint from the EPA or from the users of the facility nor from the residents of the Village about odor, etc. I refer to the project as ‘a plum that fell in our lap.’”

Hon. Shirley Ketter, Mayor of Itasca, regarding the Chancellory Sheaffer System

“We spent many months considering many different kinds of wastewater treatment alternatives. One reason we chose the Sheaffer System is because we feel it is a system of the future, because it is environmentally sound. We feel that the Sheaffer System is the best choice for the future of Thompson’s Station.”

Hon. Cherry Jackson, Mayor, Town of Thompson’s Station

“My overall evaluation of the system is that it is excellent. It meets or exceeds all of our expectations. We experience no odor problems and have never had to remove any sludge. We operate our system at a fraction of the cost of our standard-type wastewater treatment facility at our development in Florida.”

Chuck Fanaro, Owner and Developer,
Saddlebrook Farms adult living community

“We have never removed any residual solids from the treatment cells during over 13 years of operation, and we have no plans for removal in the near future.”

Steve Gendusa, Director of Engineering, Chancellory Sheaffer System

“The technology has been around for a long time, so it’s not new—but, it’s a greener, more environmental-friendly form of reusing water. This will definitely be one of the models for the state. The EPA is anxious to get it going, so they can send other communities this way and look at what it is and how it works.”

Hon. Robert Seyller, Mayor of Cortland, IL,
regarding the installment of Cortland’s municipal Sheaffer System in April, 2006



Wastewater Reclamation & Reuse Systems

~ Statement of Qualifications ~

REFERENCES

Chuck Lehmann, Manager
Wynstone Golf Community
133 North Wynstone Drive
North Barrington, IL 60010
(847) 304 – 2850

Joe Costello, WW Manager
Duke Energy Corporation
Mill Creek CT Station
P.O. Box 639
Blacksburg, SC 29702
(980) 722 – 6027

Jeremy Easum, P.E.
Sage Civil Engineering
2824 Big Horn Avenue
Cody, WY 82414
(307) 527 – 0915

Barry Haynes, Manager
New Bolton Center
School of Veterinary Medicine,
Chester Co., Pennsylvania
(610) 444-5800 x 2353

Rob Tunnell, President
Tunnell Companies, L.P.
Baywood Golf Course
R.D. 1, Box 291
Long Neck, Delaware 19966
(302) 945-9300

Mr. Alan Petersen, Planning & Dev. Mgr.
Elk Grove Village Park District
(Irrigates with reclaimed water from
Hamilton Lakes SMRRS)
1000 Wellington Avenue
Elk Grove Village, IL 60007
(847) 228-3485

Philip S. Bus, Director
Kane County Development Dept.
Mill Creek New Town &
Fox Mill Subdivision
719 Batavia Avenue
Geneva, IL 60134
(630) 232 – 3480

Charlie Foulkes, Manager
Foulkes Utilities
1114 S. 13th Street
St. Charles, IL 60174
(630) 443 – 6270 ext. 224

Greg Langliers, Town Manager
Town of Thompson's Station
P.O.Box 178
Thompson's Station, TN 37179
(615) 794 - 6978

Hon. Robert Seyller, Mayor
Town of Cortland
1909 Somonauk Rd.
P.O. Box 519
Cortland, IL 60112-0519
(815) 756-9041