

Yerkes STANDARD

SPRING 2002

YERKES ASSOCIATES' BROAD RANGE OF SERVICES DRIVES PROJECTS FROM CONCEPTION TO COMPLETION

Drip vs. Spray: Time for a Change

For municipalities already convinced of the advantages, drip distribution is now more appealing than traditional spray methods.

"New understanding of integrated controls, filtering components, and drip emitters designed to maintain a constant flow with changes in pressure make drip distribution a far more attractive solution for effluent dispersal than ever before," says David Linahan, P.E., Yerkes Associates Chief Sanitary Engineer.

"These new methods address concerns some Pennsylvania municipalities, along with the state Department of Environmental Protection (DEP), have had relating to solids filtration/solids penetration into the tubing and surface saturation in regards to drip distribution," he explains.

A workshop held in Exton, PA, in November highlighted the advantages of using drip distribution. Experts from across the country answered questions from local officials and engineers regarding their 25 years of experience with drip distribution for wastewater systems.

Some of the questions posed related to storage requirements for cold weather, algae, system controls, and filtration methods.

When using spray irrigation, limited application of the effluent occurs during the winter months, requiring large storage lagoons to hold the effluent until spraying is possible. Research and years of experience with drip in cold climates have shown that effluent can easily be applied year round.

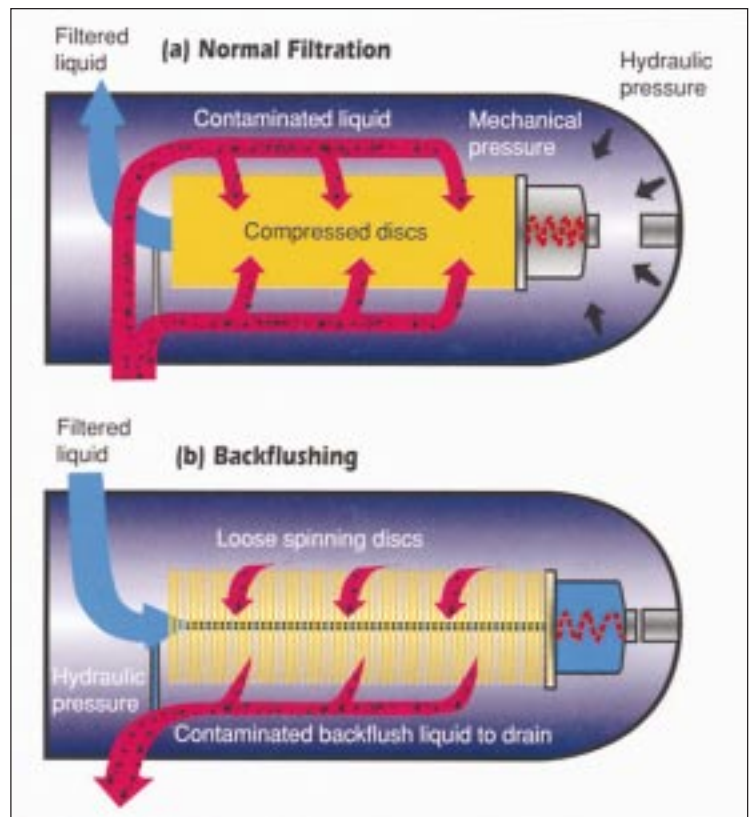
A few days storage for drip is still recommended, mainly to allow time for mechanical repairs to the system.

Concerns with water freezing in the drip tubing and distribution lines have been addressed by experienced design and good layout of the distribution fields.

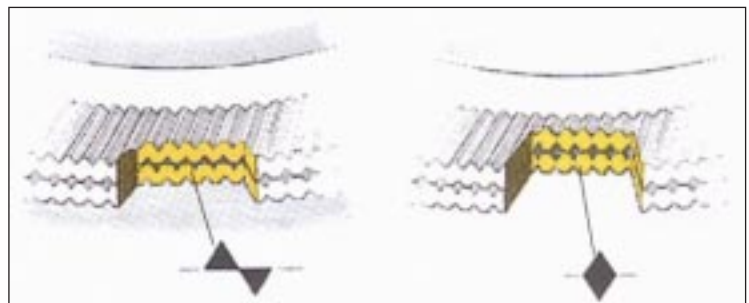
New designs and advances in filtering and control components have improved the use of traditional irrigation methods. (See example of filter system) According to the experts, current drip distribution design for wastewater systems has improved the technology tremendously.

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Scheme of SPIN-KLIN Operation Principle



Filter Disc Structure



**Example of a Drip Filter System in Action -- this system helps filter out algae, a common problem with most irrigation systems.*

YERKES HOSTS REGIONAL WASTEWATER WORKSHOP

A site tour of Pennsylvania's first large-volume drip distribution treatment plant was recently hosted by Yerkes Associates on November 6th, during the region's first Drip Distribution for Wastewater Recycling Workshop.

The two-day workshop, sponsored by The National Onsite Wastewater Recycling Association (NOWRA) and its Pennsylvania members, was held from November 5-6 in Exton, PA. City and municipal engineers learned about the latest technologies and approaches to achieving water quality excellence through onsite options.

The workshop included a tour of the state-of-the-art Bridlewood Farm Treatment Plant in Thornbury Township, Chester County, PA. The drip system recycles an average of 55,000 gallons of treated water per day using the latest wastewater treatment technology in the region.

Yerkes designed and engineered this cutting edge system, which serves single-family homes, town homes, apartments and a small daycare center at the Brandywine at Thornbury Planned Community.

"This event was an excellent opportunity for community planners, developers & system designers to learn more about the advantages of drip distribution," said David Linahan, organizer of the event and a principle and chief sanitary engineer from Yerkes Associates. "Improving waste water systems throughout Chester County is a goal for us all."

For more information on becoming an active NOWRA member, contact David Linahan at (610) 644-4254.



"Improving waste water systems throughout Chester County is a goal for all of us," says David Linahan.

Pictured below is the cutting edge controls & filter system at the Bridlewood Farm Wastewater Treatment Plant.

A group of soil scientists examine soil samples on the five acre field where the drip system was installed.



Yerkes president Al Giannantonio (left) and event organizer David Linahan take a break during the Drip Tour.



YERKES RESTRUCTURES FOR FUTURE GROWTH



Vice President Walt Green, President Al Giannantonio, and Secretary/Treasurer Bill Wermuth

Yerkes Associates has taken great pride in the last 127 years of its existence to operate and be recognized as a family business. As we entered the second year of the new millennium, we reflected on the changes that have occurred in both the national and business world this past year, and have made adjustments in our approach to doing business.

In order to maintain a uniform, managed growth that will continue to benefit our clients as well as our employees, we have restructured our management team to better serve both.

A Board of Directors has been formed to provide guidance for each of the departments within the company. John B. Yerkes, Jr. is serving as Chairman with the shareholders serving as the remainder of the Board. Albert J. Giannantonio has been appointed as President of the company and Walter E. Green as Vice President. William C. Wermuth was appointed Secretary/Treasurer.

Each will work with the Board to insure that the desired growth of the business occurs and that "quality of product" is maintained.

Toward expansion of the business, our new Morgantown office has generated both municipal and private clients in the areas of northern Chester County, eastern Lancaster County and southern Berks County. We are looking forward to an increased presence in those geographic areas by providing the quality of service that we have become known for to those we presently serve.

As one of the few remaining consulting engineering firms that has not been absorbed by a larger conglomerate, we can assure our clients that we will continue to provide personalized and efficient consulting services to both the municipal and private sectors.

OTHER ADVANTAGES OF DRIP

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Current drip design easily addresses concerns regarding root intrusion, slime, and solids buildup in the dripper tubing and distribution lines, common problems in most irrigation systems. Dripper tubing used specifically for wastewater applications comes with slime and root inhibitors built right into the emitter or wall of the tubing. Automatic field flushing of the tubing and lines removes solids and slime.

The key to success, however, is the centralized and coordinated control of the pumps with the zone and field flush valves.

Algae, a problem with some irrigation systems, pose no concern with a drip distribution system. The microscopic algae that are not captured by the filters simply pass through the drip emitters and will quickly die and decompose in the soil.

To make full use of all the advantages provided by using a drip distribution system, a fully integrated control system must be provided. The control system opens and closes the valves to the different zones, turns pumps on and off for dosing the fields, the field flushes the drip tubing, and backflushes the filters.

"The technological advances that have been developed over the years combine with the traditional attractiveness of drip methods to make drip a superior solution for municipal sewer requirements," says Linahan.

With all the advantages that now exist with drip distribution, habit and conventional thinking are the main obstacles to convincing municipalities that drip is an attractive alternative.

"Some may say, well, spray has been around for over 100 years, and drip has only been around for 25," says Linahan.

"We understand the difficulty in changing a way of thinking about a system that's been effective for over a century," he adds. "But we believe science and economics can persuade developers to use and municipalities to approve more drip systems over the next few years."

As proof, Linahan points to the drip distribution treatment plant located in Thornbury, Chester County. Serving a 526-unit community, the system is the first large-volume facility in the state, currently dispersing 65,000 gallons of effluent per day.

Yerkes is leading the way on drip distribution as a supplement to other wastewater methods and a viable alternative when traditional methods are not practical.

THE LATEST DEVELOPMENTS

▼ **City of Coatesville, Coatesville, PA . . .**
Yerkes was appointed as the City Engineer to the City of Coatesville last year and among the many other assigned tasks, is assisting the city in its "2001/2002 Road Rehabilitation Program." The high priority road project consists of the repair and repaving of approximately five miles of existing city streets. Yerkes has prepared an initial evaluation of the roads designated to be addressed and has prioritized the work to be accomplished. Plans and specifications have been prepared for bidding and the work will be completed over the next two years. As part of a significant revitalization program, the city is looking forward to upgrading additional streets in need of lesser repairs in the near future.

▼ **Cornell University, Ithaca, NY . . .**
Yerkes Associates will be designing the site improvements for the new multi-story building addition and entrance for Cornell's prestigious School of Hotel Administration. This facility is located in the heart of Cornell's large campus. KSS of Princeton, NJ, who worked with Yerkes on a recent project at Bryn Mawr College, is the architect for the project.

▼ **Haverford College, Haverford, PA . . .**
Haverford College has retained the architectural firm Bohlin Cywinski Jackson (BCJ) to perform a Master Plan study of the entire campus and to design an integrated athletic facility. BCJ has asked Yerkes to provide consulting engineering and survey services as Yerkes has been performing civil engineering and land surveying at the College's beautiful 240-acre campus for almost 100 years, and has worked successfully with BCJ on several other institutional projects.

▼ **Nantmeal Warwick Joint Sewer Authority, PA . . .** Development of the French Creek Golf Club and Village, which is located in Warwick, East Nantmeal and West Nantmeal Townships, has triggered the formation of a joint municipal authority in these three northern Chester County Townships. Yerkes Associates has been appointed as the Municipal Authority Engineer for the new Authority and has been providing consulting services to guide the development of the sanitary sewage treatment system proposed to serve the golf course and residential areas of the project.

▼ **Radnor Financial Center, St. Davids, PA . . .**
The Rubenstein Company has retained Yerkes Associates to provide planning, surveying and civil engineering services for the conversion of the Wyeth-Ayerst complex into private offices. This project involves approximately ten large buildings and one million square feet of office space.

▼ **Saunders House, Wynnewood, PA . . .**
HLM Design and Yerkes Associates will be designing new buildings, parking and landscaping for the Saunders House, a leading provider of long-term care and rehabilitative services, which adjoins the Lankenau Hospital campus. To allow for the expansion and better serve the community, the House was recently rezoned by Lower Merion Township.

Chester County GIS to Expand Services

At the recent Chester County GIS Convention, the County personnel announced plans to include infrastructure facilities in the County's already comprehensive GIS database. Universal sharing of information will be facilitated by municipalities adopting ordinance revisions that require all applicants to provide an electronic layered file of their project for input to the system.

GIS will provide a useful tool for each municipality to maintain and document data about its own infrastructure. When this information is compiled and placed in a usable format, timely maintenance programs and more accurate capital improvement budgets can be prepared. With an accurate infrastructure database in place, the municipality can provide better information on existing systems and planned improvements, thus helping to guide development. Developers, in turn, will be aided in determining the suitability of parcels for project needs and their consultants will realize a cost savings in having an easily accessible and accurate source for infrastructure information.

† Yerkes Associates, Inc. is a consulting civil engineering firm employing civil engineers, surveyors, architects, landscape architects and site planners. The firm has offices in West Chester, Rosemont, and Morgantown. For information call (610) 644-4254.

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