




# Pipe Problems. Solved.





“During the 15 years I have been in the multifamily industry, this is only the fourth letter of recommendation I have written ... Personally overseeing five re-plumb projects in the past — which were just short of nightmares — I was somewhat skeptical. Very quickly, I was proven wrong. The team of professionals you have working on our project are phenomenal.”

- MELISSA CANNATA, *Regional Property Manager,*  
*RMI, Tampa, FL*





## SageWater is America's pipe replacement and restoration expert.

**We have successfully replaced over 30 million feet of pipe in more than 80,000 occupied residences since 1988.**

When faced with leaks and other plumbing problems, natural instinct says to call your local plumber. But what happens when your problems far exceed a local plumber's capabilities and experience?

### **It's time to call SageWater.**

For more than 25 years, SageWater has solved complex age-related (corrosion) and defective piping (stress fractures) problems across a variety of property types—from garden-style apartment complexes and high-rise condominiums to hotels and other commercial properties.

Our in-house crews specialize in replacing and restoring piping systems—hot and cold water supply lines, drain piping systems, and closed-loop hydronic HVAC systems. Our proprietary, turnkey solutions address every aspect of your buildings' piping issues, including in-unit plumbing, risers running between floors, intra-building mains, and more.



**John B. Ellis, Jr.**  
*Chief Exec. Officer*



**Peter M. Page, Jr.**  
*President*

## Minimal Disruption, Maximum Satisfaction

We stand apart in our industry because we've perfected the art of working efficiently in occupied buildings. We complete each unit in just days. And we offer two guarantees that make a world of difference:

- Residents will have water at the end of each day.
- No resident will have to move out while we're working.

Our unrivaled approach to resident and property management communications keeps everyone informed every step of the way.

This is all part of the customer-first philosophy established by SageWater founders Peter Page and John Ellis. No other plumbing firm matches our level of care, attention to detail, and project management.

All of our replacement and restoration experts are SageWater employees. From professional plumbers and drywall experts, to painters, tile and carpentry, we keep everything in house.

This ensures unprecedented quality control, guarantees all projects are completed precisely as scheduled, and reduces costs incurred from general contractor markups.

If you have interior pipe problems, or you suspect costly problems are on the horizon, call SageWater at 888-584-9990—and consider them solved.

# SageWater Solves a Variety of Pipe Problems

Piping problems, from corrosion to stress fracturing, can plague even well maintained and newly constructed buildings. Both polybutylene and certain yellow brass fitted systems are prone to fail prematurely—often leading to catastrophic leaks.

For buildings over 25 years old, corrosion and deterioration are common enemies of potable fresh water supply, closed-loop hydronic HVAC, and drain, waste, and vent (DWV) systems. The good news: SageWater’s turnkey solutions can solve every type of piping problem in all kinds of occupied buildings.

## DEFECTIVE PRODUCTS



### POLYBUTYLENE

A plastic resin used in the manufacturing of pipes and fittings from 1978 to 1995, polybutylene (often called “poly” for short) was installed in up to 10 million low-rise apartments and condominiums as well as single-family homes throughout North America. Common water additives like chlorine attack poly pipe and fittings, leading to stress fracturing and catastrophic failure.

A billion dollar settlement was paid out by the manufacturers in 1995 but the timelines for making a claim have now expired. Only a small percentage of polybutylene properties were repiped during the settlement period, leaving millions with defective piping. Unfortunately for those properties, there is a common misconception that if your poly pipes haven’t leaked yet, they never will. This is simply not true. Polybutylene fails suddenly—and often spectacularly—without warning. The problem is now widely understood, and most insurers and financiers require replacement of polybutylene systems as a condition of new or renewal policies and loan covenants.



### YELLOW BRASS FITTINGS

Certain PEX pipe systems used connections known as high-zinc yellow brass fittings. These fittings are subject to dezincification, which can cause stress fracturing and disastrous leaks. In fact, many manufacturers have been subject to class action lawsuits. Yellow brass first came on the market in the late 1990s, and though the full extent of the problem is yet to be determined, it is known to be an issue nationwide. There are some class action settlements available to help remedy yellow brass claims. If you are encountering problems with your yellow brass fittings, please call us and we can advise you on potential courses of action.

## AGE-RELATED PROBLEMS



### DRAIN, WASTE AND VENT PIPING

Corrosion of cast iron drain, waste, and vent (DWV) piping can become a problem in older properties. In fact, age-related DWV issues can often be severe, depending on the external environmental conditions and the corrosiveness of the effluent and gases within the pipes. As a result, major blockages and even complete structural failure are not uncommon. Timely replacement will prevent recurring problems, system failure, extensive damage and toxic water contamination.

If you are experiencing repeated backups, breaks, or leaks, call SageWater for a free assessment of your system. If the drain and waste system within your building needs to be replaced, SageWater's *One Call Repipe*® solution is worth considering.



### COPPER AND GALVANIZED STEEL SUPPLY PIPING

Aging copper and galvanized piping systems can cause leak damage, low water pressure and discolored water in potable water systems. These problems often lead to resident dissatisfaction and costly repair expenses. In fact, one SageWater client estimated that the indirect costs of old pipes amounted to nine times the actual leak damage repair cost.

Common complaints with copper and galvanized steel pipes include frequent pinhole leaks resulting from corrosion. In addition to total piping system replacement, SageWater also offers a minimally invasive, low-cost restoration solution—*SageWater Renew*®.



### CLOSED-LOOP HYDRONIC HVAC PIPING

SageWater has extensive experience in the turnkey replacement of closed-loop hydronic riser piping and associated header piping. As closed-loop systems age, the pipe insulation deteriorates. As a result, condensation often causes these systems to corrode from the pipe's exterior. In fact, it's not uncommon to find hydronic pipe literally crumbling apart inside a building's walls.

Replacing these pipes doesn't just solve the leak problems and eliminate resident inconveniences; today's new piping systems with improved insulation significantly increase efficiency, making an HVAC repipe a green solution. Likewise, fan coil unit (FCU) replacement as part of a closed-loop repipe further improves the overall system efficiency.



# One Call Repipe®

SageWater’s proprietary *One Call Repipe* provides a complete pipe replacement program, from assessment to system installation for condominiums, apartments, and commercial properties. Our turnkey service includes a site evaluation, estimating and budgeting, a scheduling plan, and a resident communications package customized for each project.

Our in-house team of project managers, plumbers, wall finishers, tile setters, painters, carpenters, and cleaning staff work together seamlessly to expedite completion. From our meticulous upkeep of the work areas, to expert piping installation and precise matching of paint and textures, we deliver an incredible finished product.

<b>One Call Repipe Services</b>			
	Fresh Water Supply Piping	Drain, Waste, and Vent Piping	Closed-Loop Hydronic HVAC Piping

## PRE-CONSTRUCTION

### PROJECT EVALUATION

Project evaluation frequently consists of a site visit and client meeting to gain an understanding of the scope of work and site conditions. We also collect floor plans, site maps, and other key details while visiting as many representative units as possible.

### SCOPE OF WORK DEVELOPMENT AND PROPOSAL

Our senior estimating team prepares a detailed proposal including cost estimates and a project budget, a schedule/sequencing of work, and other information necessary for you to evaluate project feasibility. We aim to minimize our time in each unit as well as system downtime. If you have engaged a third-party engineer, architect, or construction manager, SageWater will work as a partner to refine a final scope of work that is value engineered, ensuring you receive the best possible result.

### PROJECT KICKOFF

Once the contract is approved, SageWater will acquire the necessary permits, schedule preconstruction meetings with the building staff, property managers and other stakeholders, conduct resident town hall meetings (if desired), and work with building management to finalize the communications package.

Before we ever enter a unit, we provide color-coded work impact diagrams that we distribute in advance of the renovation so that residents know where we will be working. In addition, each project is staffed with a full-time onsite project manager who is available to answer questions and is in daily contact with the community’s staff.





## DURING CONSTRUCTION

### SITE PREPARATIONS AND PROTECTION

Every *One Call* renovation begins with extensive site preparations, including setup and installation of a dust mitigation system. While we ask residents to move their own personal possessions such as artwork, electronics and smaller home decorations, our crews will move furniture that must be temporarily relocated to access the walls that contain the pipes that must be replaced—after performing hundreds of projects, we have found this to be the best balance of responsibilities between our staff and the residents.

We treat residents' belonging as we would our own and we clean each unit daily to maintain a tidy worksite. We guarantee the unit will be operational at the end of each day.

### PIPE EXTRACTION

SageWater crews operate as an integrated team resulting in the least invasive, most efficient process possible. Once each unit is prepared, our teams access the wall cavities by making precise drywall and tile cuts within the work areas. If required, asbestos remediation is performed at this stage. Our plumbing crews remove the old pipes to make way for the new piping system to be installed.

### NEW PIPE INSTALLATION

Our pipe replacement specialists then proceed with installation of the new plumbing system. No matter the size or complexity of your renovation, our *One Call* guarantee ensures that your building's plumbing system will be operational at the end of each day and residents never have to move out during the process.

### WALL RESTORATION AND FINISHES

Following each day's city or county plumbing inspections, we begin the process of putting each unit back to its previous finished condition. Our drywall craftsmen seamlessly patch and match the affected areas using state-of-the-art techniques for the truest paint matching and surface restoration. Our paint matching techniques include collecting paint samples from affected surfaces and computer matching each sample. In addition, our team of expert craftsmen will reset vanities, complete tile patching, and perform any required carpentry or trim work to bring each unit back to its original condition prior to construction.

### WALK THROUGH AND SIGN-OFF

Once the renovations are complete, our on-site project manager, along with a client representative, inspects each unit to ensure that work was completed correctly and to identify items (if any) that need additional attention. Any remaining work will be scheduled and repaired promptly, often the same day as the inspection.



# Custom Communications

Informing residents and onsite management about the *One Call Repipe* process and schedule and maintaining two-way communication with stakeholders are critical to project success. That's why we have developed communication protocols that effectively set expectations and minimize inconvenience for everyone.

## COMMUNICATION TACTICS



### PROJECT MANAGEMENT

Full-time onsite Project Management to oversee and manage the project, liaise with residents and onsite building management, and to coordinate all project communications. Large projects often have multiple project managers.



### COMMUNITY TOWN HALL MEETINGS

Community Town Hall Meetings where project managers describe what residents can expect during the renovation and address any questions or concerns.



### CUSTOM PROJECT WEBSITE

For condominiums and very large apartment projects, a Custom Project Website with details about the process, up-to-date schedules, contact information, and copies of resident notices and work-impact maps.

## RESIDENT NOTICES

A series of Resident Notices to inform all occupants about the project schedule and upcoming work in their individual units.

### Project Overview



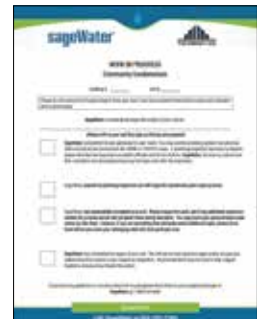
### Resident Expectations



### Work Impact Map



### Work in Progress





# Benefits of a One Call Repipe®



## **BEST IN CLASS COMMUNICATIONS:**

Resident communications are critical to the success of any project. We provide a series of notices describing the work, resident responsibilities (such as moving personal items) and scheduling. SageWater will assign an experienced full-time superintendent to manage your project and to act as resident liaison. The superintendent will be readily available to answer questions and assist residents in preparation for the work in their homes.



## **PROVEN TRACK RECORD:**

With the experience of installing over 80,000 complete piping systems, our team provides a depth and breadth of experience that is simply unmatched in the industry. Our management team has an average tenure of more than 15 years ensuring that legacy of knowledge, best practices, and proven success is brought to each and every repipe project we undertake.



## **EXCLUSIVE WARRANTIES:**

As a result of our extensive experience in occupied-unit repipes, our CPVC and PEX suppliers have granted us exclusive warranties. The suppliers will provide for the cost of labor to replace defective materials should you encounter defects with the system—as you know, it is very rare for a manufacturer to do more than provide replacement materials, so this is a great benefit of using SageWater for your project. Please reference the manufacturer's warranty for full details.



## **MINIMAL DISRUPTION:**

Water supply is guaranteed to always be available nights and weekends because we complete the plumbing portion of the work in one day. This benefits all residents, whether the building is a condo or an apartment. No one has to move out and no additional costs are incurred for temporary relocation. Likewise, our crews are thoroughly trained to isolate their work areas and contain dust. At the end of each day, they clean up after themselves and leave the unit in a neat, livable state. In most cases, individual units are habitable even during the day when our workers are in the unit, should homeowners need to remain at home during construction.



## **ON TIME DELIVERY:**

For supply piping systems, the work in each unit will be complete in three to five days—Day One is plumbing, and the drywall/paint restoration process begins on Day Two (plumbing inspection permitting). Most units are completed in three to four days in total, with a five-day guarantee for substantial completion. With integrated crews there is no downtime between activities (plumbing to drywall repairs to painting) and our schedules run like clockwork. Many property managers are surprised with how accurately we can project our work schedules. In fact, before we even start a job, we can precisely pinpoint what units we will be working in on any given day of the project.



## **GREATER EFFICIENCY:**

Contractors with little repipe experience subcontracting out to plumbers may cut twice the amount of drywall and tile just trying to find the right pipes for replacement. This results in significantly more drywall related work and more time spent restoring finished surfaces back to their original state. This takes more time and costs more money. Because SageWater only uses in-house teams, Plumbers aren't causing extra destruction because the same team has to make the repairs. We optimize across trades to take the big picture towards optimization. In addition, there aren't gaps between phases or work, resulting in a much quicker turnaround.

# A Contractor You Can Trust

SageWater's long-term success starts and ends with its most valuable asset: its people. Our commitment to provide a service carried out by team members that are drug/drunk free, eligible to work in the United States, and have clean criminal records is of the utmost importance.

**DRUG FREE, E-VERIFIED, AND  
BACKGROUND CHECKED**



To assure the safety of employees, protect client and company property, and foster efficient operations, SageWater employs a drink-free and drug-free work policy. All SageWater team employees are subject to random unannounced alcohol and drug testing. Our partner in this effort is LexisNexis®, a recognized leader within the industry for over 30 years.



SageWater chooses to voluntarily participate in E-Verify, the I-9 verification program offered and operated by the Department of Homeland Security in partnership with the Social Security Administration. The E-Verify program compares each employee's I-9 against over 500 million U.S. government records to verify whether or not a person is eligible to work in the United States. The E-Verify program has been a valuable asset in our constant commitment to maintaining a legal workforce.



When homes are at stake, thorough background verification is vital. At SageWater our background verifications can include detailed consumer reports, personal interviews with third parties, such as family members, business associates, financial sources, friends, neighbors, and other acquaintances. Our partner for such services is First Advantage®, a leading Fortune 500 organization with a proven track record and one of the world's largest providers of employment background screening.

## CASE STUDY: HYDRONIC RISER PIPING



**4000 Massachusetts  
Avenue**  
Washington, D.C.

SageWater performed a *One Call Repipe®* for this apartment complex that had extensive age-related corrosion in the piping of its 68 closed-loop HVAC risers. Through a collaborative effort with building management we developed a complete resident communications program (including a project-specific website). We performed all construction including plumbing, insulation, drywall and paint; along with managing the asbestos abatement.

**UNITS:**  
441

**STORIES:**  
8-16

**BUILT:**  
1953

**DURATION:**  
12 months

**PROBLEM:**

Age-related corrosion of closed-loop riser piping resulting in multiple failures

**SOLUTION:**

Turnkey piping replacement of 68 closed-loop risers, drywall and paint renovation



CASE STUDY:  
**CAST-IRON DRAIN  
AND VENT PIPING**



**1350 Ala Moana**  
Honolulu, HI

The building-wide repipe of the cast-iron waste and vent system at 1350 Ala Moana is likely the most complex plumbing renovation ever to take place in Hawaii in an occupied building. Community manager Ron Komine was impressed with our work: "I honestly did not know that one company did projects like this. That it could be done quickly and without the huge added cost and inconvenience of moving everyone out of their homes. But SageWater's process worked! Their crews were awesome."

<b>UNITS:</b>	<b>STORIES:</b>
353	33
<b>BUILT:</b>	<b>DURATION:</b>
1968	14 months

**PROBLEM:**  
Severely corroded cast-iron waste and vent piping, and roof drains

**SOLUTION:**  
Turnkey piping replacement, asbestos abatement, remedial firesafing, drywall/paint renovation

CASE STUDY:  
**SUPPLY SYSTEM  
BOILER CONVERSION**



**Northwest Park**  
Silver Spring, MD

SageWater completely replaced the potable water piping in this apartment community and converted an inefficient central boiler system to a modern configuration that uses individual water heaters and submeters in the 876 units. This "boiler conversion" enabled the property owner to make residents accountable for the costs of water consumption as well as the cost to heat potable water. The project paid for itself in fewer than four years.

<b>UNITS:</b>	<b>STORIES:</b>
876	Garden Style
<b>BUILT:</b>	<b>DURATION:</b>
1942	17 months

**PROBLEM:**  
Severe pipe corrosion, outdated central boilers, high utility expenses

**SOLUTION:**  
Turnkey piping replacement, installation of individual water heaters and water meters

CASE STUDY:  
**POLYBUTYLENE  
SUPPLY PIPING**



**The Hamptons**  
Lakewood, CO

At The Hamptons, the threat of catastrophic leaks and related damages loomed daily. SageWater replaced the defective polybutylene piping throughout the property using our *One Call Repipe*® solution. We completed the project on time, on budget, and with minimal disruption to this residential community, evoking significant praise from the onsite property manager.

<b>UNITS:</b>	<b>STORIES:</b>
312	Garden Style
<b>BUILT:</b>	<b>DURATION:</b>
1988	4 months

**PROBLEM:**  
Defective polybutylene pipe and fittings

**SOLUTION:**  
Turnkey piping replacement, drywall and paint repair



# SageWater Renew®

SageWater understands that a repipe is not always the right solution for every customer. For many properties, in-place pipe restoration is a viable alternative to fixing leaking pipes at a fraction of the cost.

SageWater Renew provides a non-invasive solution to address pinhole leaks and pipe corrosion in copper and galvanized steel domestic pipes. Suitable for many multifamily residential and commercial buildings, SageWater Renew is safe and environmentally friendly.

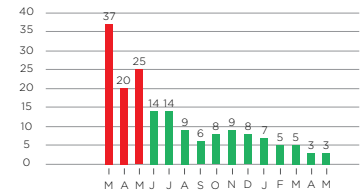
## STOPS PINHOLE LEAKS AND EXTENDS SYSTEM LIFE

We start by testing the water to determine its composition and the optimal mix and concentration of corrosion inhibitors needed for each individual building. Based on a process used for over 75 years, we then design and install a system to feed our proprietary, tasteless, odorless, FDA/EPA/NSF approved additive into the building's main water supply system. This additive forms a thin protective film on the inside of the pipes, preventing additional corrosion and stopping pinhole leaks from forming.

The film does not clog your pipes, repairs itself if damaged, and prevents further pinhole leaks and pipe corrosion as long as the additive is precisely maintained. After the protective film is fully formed—Renew monitors, maintains and tests the treatment system on an ongoing basis to ensure the property is protected.



## CASE STUDY: PINHOLE LEAKS



Leaks per month before Renew (red) and after Renew (green)

### 410-Unit Apartment Building Silver Spring, MD

This property was having over 30 pinhole leaks per month in supply lines, including 125+ risers within units. Building maintenance staff were often just clamping the leaks.

<b>UNITS:</b> 410	<b>STORIES:</b> 22
<b>BUILT:</b> 1969	<b>DURATION:</b> Ongoing

**PROBLEM:** Poor water quality was corroding the domestic plumbing resulting in frequent pinhole leaks.

**SOLUTION:** Application of the Renew solution on the domestic hot water plumbing system. Installing Renew prevented more than 300 leaks in the first year of use based on the leak frequency prior to installing the Renew system. In addition, prior to implementing Renew, the property was replacing 2-3 risers per quarter as a result of continued leaks. After installing Renew, the building only had to replace half of one riser in the first 12 months.



# Benefits of SageWater Renew®



## **COST EFFECTIVE:**

SageWater Renew provides a quick return on your investment. With a low up-front installation cost, and a monthly service fee, Renew delivers significant value compared to epoxy lining. By eliminating repair costs, Renew often pays for itself on a monthly basis, and delivers long-term value for years to come.



## **CONVENIENT PROCESS:**

By employing a non-invasive process, SageWater Renew makes installation a breeze. For most installations, there is no down-time for the supply piping system and residents are never without water. In addition to being quick and easy to install, Renew extends the life of your piping system, reducing leaks and maintenance calls to plumbers, and deferring repiping or lining costs.



## **EFFECTIVE TREATMENT:**

Renew works by establishing a protective film on the inside wall of your pipes. It seals the pipes to prevent pinhole leaks and stops further corrosion. Renew also reduces the build-up of minerals and scale in your pipes. This helps control the leaching of lead and other toxic materials from your piping system into your water supply. It improves water discoloration and helps solve odor and taste issues.



## **PROVEN RESULTS:**

Clients using Renew have experienced an 80-100% reduction in the number of monthly leaks. By treating the entire system, Renew identifies and isolates the problem areas, reducing repair costs. Instead of replacing the entire piping system, Renew enables customers to identify the trouble spots enabling them to only replace those isolated sections of pipe that are in structural failure.



## **UTILITY GRADE PROTECTION:**

According to the National Association of Corrosion Engineers, Public water utilities spend \$36 billion per year protecting *their* pipes with corrosion inhibitors. The EPA often requires that utilities use corrosion inhibitors to prevent dangerous elements from flowing downstream to consumers. However, the required levels of protection for public utilities are often not enough to protect the end-users' pipes. Renew employs the same solution within the building envelope, ensuring you gain utility grade protection for your pipes.



## **SCIENTIFICALLY SAFE:**

Silicates have been used by utilities for over 75 years to prevent corrosion. They have also been used by the food service industry to refine vegetable oils, process eggs and clarify beer and wine. The Renew solution uses the same FDA/EPA/NSF food grade additive used by utilities so you can rest assured your water is safe.

# Other Services

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**The SageWater team offers a variety of other plumbing renovation services designed to enhance the value of both multifamily and commercial structures.**

- Boiler to Water Heater Conversions
- Water Submetering
- Utility Billing Services
- Washer/Dryer Retrofitting
- Fan Coil Replacement during Closed Loop HVAC System replacement
- Due Diligence Consultation

**Visit [sagewater.com](http://sagewater.com) or call 888-584-9990 for a complete list of all the services we offer.**

“The scope of work presented to SageWater was daunting to say the least. SageWater staff held numerous town hall meetings with the intent to inform our owners about what to expect leading up to the project. Their workers were on time and ready to get started every morning and their cleanup crew was on the job at the end of every workday. When a SageWater representative said they would “take care of it” or “get back to you,” they did so in a timely manner. The bottom line is that SageWater reached “substantial completion” of the scope of work of our drain waste pipe replacement two months ahead of schedule and below the initial budget.”

- SHANNON NODA-CARROLL, *Board President, 1717 Ala Wai, Honolulu, HI*

“... My job as President was to maximize the value to our residents while causing the least inconvenience. SageWater far surpassed in both areas... When there was a round of applause at the end of the [“town hall”] presentation, I knew it went well. We had several special cases, and the final icing on the cake was that the project was completed ahead of schedule and on budget.”

- ERIC JOHNSON, *President, Contessa AOA, Honolulu, HI*

“The results have been spectacular. Increased occupancy, less turnover, a more confident staff that can look a prospect in the eye and promise excellent service. What a difference.”

- DAVID HUMES, *FDH Asset Management, San Antonio, TX*





**The SageWater client list is extensive, and we are privileged to have provided excellent service to leaders in the multifamily world, including:**

- |                           |   |   |
|---------------------------|---|---|
| 1350 Ala Moana            | Fairfield Residential                       | Post Properties                                   |
| 1717 Ala Wai              | Gables Residential                          | Riverstone Residential                            |
| AIMCO                     | Greystar                                    | Sentinel Real Estate Corporation                  |
| AMLI Residential          | GWL Realty Advisors <small>(Canada)</small> | SSR Realty  |
| Archstone-Smith           | Harbour Group International                 | Trammell Crow                                     |
| AvalonBay                 | Hokua at 1288 Ala Moana                     | UBS Brinson                                       |
| Bonaventure               | Imperial Plaza                              | UBS Realty Investors                              |
| Bainbridge                | JPI   | UDR   |
| Cornerstone               | Kay Management                              | Vertica Resident Services <small>(Canada)</small> |
| Camden                    | Ko'olani Condominium                        | Walden  |
| Colonial Properties Trust | Lincoln Property                            | Weidner Investments                               |
| Contessa Condominium      | Madison Apartment Group                     | Westdale Equity Residential                       |
| Drucker & Falk            | Northland Investments                       | Western National                                  |



[www.sagewater.com](http://www.sagewater.com)

888-584-9990

[info@sagewater.com](mailto:info@sagewater.com)



“SageWater definitely lived up to their credentials! I was amazed at the workmanship and professionalism ... Even though the new pipes are hidden by the sheetrock and no one can see the work to appreciate it, the new pipes were installed with great care and precision. Something only a Construction Manager can appreciate.”

- JOHN T. SHAW, *Construction Manger, Milestone Management, Houston, TX*

