



Pipeline Express

To provide high-quality water and exceptional services to the people and communities we support

May 29, 2026

What is Spent Lime? Why Does our Treatment Plant Produce It?

If you've ever heard operators refer to "spent lime" or "lime sludge," they're talking about a natural byproduct of the water softening process. While it might sound like waste, it actually plays an important role both inside the treatment plant and out in agricultural fields.

Why we produce it

Our source water contains naturally occurring minerals, primarily calcium and magnesium, that make the water "hard." Hard water can cause scaling in pipes, reduce soap effectiveness, and create operational challenges throughout the distribution system.

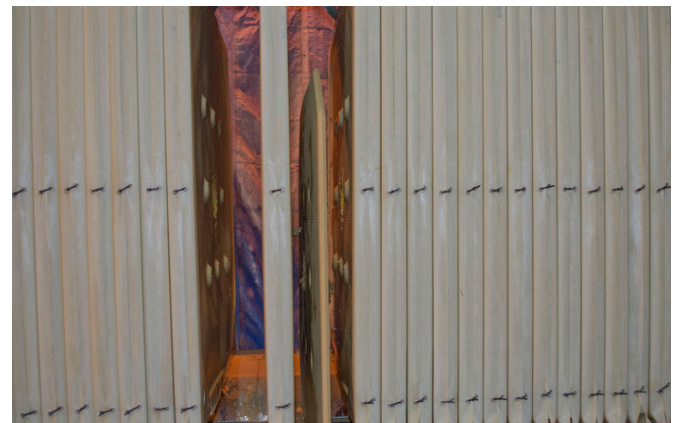
To address this, the treatment plant uses a process called lime softening. When lime is added to the water, it raises the pH and triggers a chemical reaction. This reaction causes the dissolved calcium and magnesium to form solid particles. Once they become solids, they can be removed from the water through settling. Those removed solids, made up mostly of calcium carbonate and magnesium hydroxide, are what we call spent lime or lime sludge.

What it is (and isn't)

Spent lime is not a hazardous material. It's primarily composed of the same types of minerals you'd find in limestone or other natural soils. Because of this, it can be beneficially reused rather than disposed of as waste. Think of it less as "sludge" and more as a concentrated form of the minerals we removed to improve drinking water quality.

What happens after it leaves the plant

Instead of sending spent lime to a landfill, many utilities, including ours, participate in land application programs.



Presses in the dewatering building squeeze out the excess water from the spent lime and produce cakes that are used on agricultural fields as a soil amendment.

The material is transported to agricultural fields, where it is applied as a soil amendment. In the field, spent lime serves a similar purpose to agricultural lime:

- Raises soil pH: Many soils in our region are naturally acidic. Spent lime helps neutralize that acidity, creating better growing conditions for crops.
- Adds beneficial minerals: It returns calcium (and small amounts of magnesium) back to the soil, which supports plant health.
- Improves soil structure: Over time, it can enhance soil stability and reduce compaction.

Farmers apply it in controlled amounts based on soil testing, ensuring it meets agronomic needs without over-application.

Closing the loop

The process is a good example of resource recovery.

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What is Spent Lime?

Why Does our Treatment Plant Produce It?

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Minerals removed from drinking water to improve quality are repurposed to improve soil health. Instead of managing a waste product, the utility is contributing to a beneficial reuse cycle that supports agriculture and reduces landfill use. In short, spent lime is an expected and valuable outcome of producing high-quality drinking water, and it continues to provide benefits long after it leaves the treatment plant.

Has the new plant affected how much we produce?

Sludge production is tied closely to how much water we produce and how efficiently spent lime solids are captured and removed in the treatment process. Historically, we have produced between 208-254 truckloads of sludge per month in the original plant, depending on seasonal water flow and water quality conditions.

The new treatment plant changes how solids are formed, settled and removed compared to the old method.

Preliminary comparisons between the original plant and the new treatment plant show truckload numbers are lower between 5% and 25% depending on the month between January and April of 2026. While these preliminary numbers show less sludge being hauled overall, it may also reflect a difference in solids capture efficiency and process optimization during startup and tuning in the new plant. More evaluation is still needed as part of the ongoing process optimization.

As the plant continues to stabilize and operations are refined, these numbers may continue to shift, so it is too early to tell whether the new plant is definitively reducing the amount of sludge produced per unit of water treated by any large margin. It may just be a matter of how efficiently we are now able to capture the spent lime solids.

Compliments from Fairmont Avenue

Recently a customer from the 2200 block of Fairmount Ave called in to tell us about our staff and their efforts out in the field:

“I’m calling to tell you how wonderful your employees are, like unbelievable.”

A truck had previously wrecked the boulevard work done the year before and the homeowner pointed this out to the crews working in the area that day.

“And they just fixed it.... I don’t know where you find your employees but whatever you do, keep it up because every one of them is just perfect. The level of service, how nice they are, it’s just unbelievable.... I’ve dealt with a lot of people in my life and if they were all as nice as Saint Paul Regional Water, the world would be perfect.”

*Dave. F.
from the 2200 block of Fairmount Ave*

Interns join utility



Randal Fleury



Henry Plummer



Christina Martinson

Saint Paul Regional Water Services is pleased to welcome several new interns who are sharing their skills across the organization this summer.

Randal Fleury is a mechanical engineering student at the University of Minnesota. He will be supporting DPU with inspecting and testing contractor laid water main, doing hydrant flow tests, and assisting with locate tickets. He loves his cats and enjoys music and basketball in his free time.

Henry Plummer has joined the Engineering Department's Maps & Records team as a GIS Intern. In his role, Henry is assisting with spatial data analysis and database maintenance to help support the utility's mapping and infrastructure records systems. He says he is especially excited to use his technical skills in ways that help improve the health and well-being of the community.

Supporting the communications team this summer is **Christina Martinson**, a Capital City Intern. Christina is assisting with community outreach events, educational efforts, and social media content focused on informing the public about their water service. When she is not working, she enjoys hiking, trying new restaurants, reading, and spending time with her twin sibling.

Zach Stambaugh Joins Communications Team



Zach Stambaugh

Joining the communications team is Zach Stambaugh, who recently began work as a Public Information Specialist I.

Zach is helping coordinate events, create social media content, maintain the Quench Buggy, and develop educational materials for the public. Outside of work, he enjoys fishing, traveling, attending concerts, and spending time with family and friends.

Hugo Lopez Pallares Passes Away



Hugo Lopez Pallares, a recent employee, passed away on May 5. Hugo was a valued member of our distribution team whose hard work, dedication, and willingness to help others made a lasting impact on everyone who had the privilege of working alongside him. Hugo was a man of integrity and demonstrated kindness and decency to all who worked alongside him. His commitment and service truly made a difference for our organization, and we were fortunate to have him as member of our team. We extend our heartfelt condolences to Hugo's family, friends and colleagues. We encourage everyone to keep Hugo and his loved ones in their thoughts.

Luke Van Horn Hired as Business Division Manager



Luke Van Horn

SSPRWS welcomes Luke Van Horn as the new Business Division Manager. Luke will lead efforts focused on improving operational processes, strengthening collaboration across departments, supporting customer-facing services, and identifying opportunities to modernize systems and reduce manual work. Outside the office, Luke enjoys spending time with his wife and four children, exploring new places, and finding outdoor adventures together. He is passionate about innovation and creative problem-solving and says he is looking forward to learning more about the organization and finding meaningful ways to contribute.