

POWERFUL POLYMERS
PAINLESS PROCEDURES
RAPID RESULTS

Water Treatment Plant Losing Two Million Gallons Per Day Due to Leaks

On top of a hill northeast of Chattanooga, Tennessee sits a clearwell that belongs to Eastside Utilities. Built in the 1940's on a former Army post, this clearwell consists of twin 2-million gallon tanks used for treating surface water to turn it into drinking water. The problem was that less than half of the water coming into the clearwells was making it out the other side. Although this water treatment plant has undergone several upgrades in its 70+ year lifespan, the ground beneath it has been subject to settling and consolidation. The tanks had shifted slightly and in doing so, loosened some of the joints and the water stops contained within. Measurements indicated that **the clearwells were losing 1,700 gallons per minute through various leaks**; well over 2-million gallons per day. A short drive downhill from the property revealed various gullies and small creeks created by water running down the hillside.

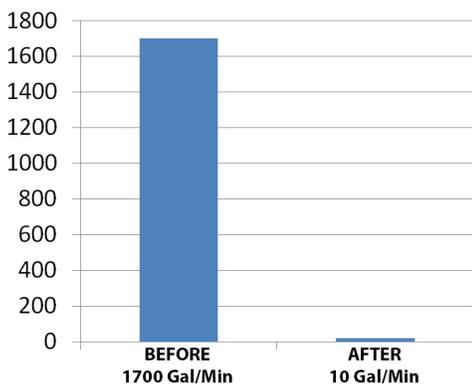
POWERFUL POLYMER

An Alchemy-Spetec certified installer was called in to utilize Spetec PUR GT500, an NSF /ANSI 61 approved product for contact with drinking water, to seal the leaks. This **single component polyurethane resin** is designed to penetrate and seal off leaks in cracks, joints, and pipe penetrations. As a hydrophilic polyurethane, it chases down water and gets into the microstructure of the concrete, forming a flexible seal and a tenacious bond with the wet concrete.



Before

Water Leak - Gallons Per Minute



99.4%
exfiltration
SEALED!

Small number of remaining leaks due to vintage valves & fittings.



After

Physical Properties 77° F (25° C) - Liquid

Physical Properties - Cured

Property	Standard	Value	Value
Tensile Strength	(ASTM D-3574)	450 p.s.i.	31,026 millibar
Tensile Elongation	(ASTM D-3574)	350%	-
Shrinkage	(ASTM D-1042/D-756)	Less than 2%	Negligible
Tear Resistance	(ASTM D-3574)	21 lbs / inch	3750 gram / centimeter
Same Day Viscosity at 25° C (77° F)	300 - 330 Centipose		

These properties were based on foam cured under pressure to simulate conditions inside a concrete crack. Properties will vary depending on application conditions.

PAINLESS PROCEDURE

Due to the amount of water escaping, all of the joints around the perimeter walls were suspect as well as the roof support columns throughout each clearwell that penetrated through the floor. The contractor drilled holes to intersect the leaking joints around the perimeter of the clearwell and along all interior joints. Injection ports were installed and Spetec PUR GT500 was pumped into each one to create an injected membrane within the joints and beneath the clearwell.

RAPID RESULT

After three days of injection the work was done and the site was cleaned up. Monitoring after the Spetec PUR GT500 was installed indicated that **the leak had been reduced from 1,700 gallons per minute to 10 gallons per minute**. The small number of remaining leaks were attributed to the many vintage valves and fittings that are still present at the plant.

About Alchemy-Spetec

The Leak Seal Division

The Alchemy-Spetec Leak Seal Product Line combines a full-system offering of polymer chemical grouts and equipment with perhaps the most experienced technical team in the industry. For any concrete leak seal application, lean on the Alchemy-Spetec team for phone, field, or engineering support. Our growing network of Regional Managers, Independent Representation, and Nationwide Distribution offers industry professionals many levels of opportunity worth discussing with our team. Consultants at Alchemy-Spetec pride themselves on rapid, powerful, and painless scheduling of field and technical support. We invite you to inquire about our bi-annual factory training held at the Tucker, GA-based manufacturing facility where they can learn from the 20+ year average industry experience of our Regional Management and Technical Team.

The Geotech Division

The Alchemy-Spetec Geotech Product Line offers industry-leading quality, full chemical grout lifting rig training and support, and unmatched contractor support in the field and with sales and marketing. Contact us today to learn about the tangible benefits of joining the Alchemy-Spetec network of geotech contractors. The Alchemy-Spetec MixMaster Pro Gun is a maintenance and production cost-saver for any lifting contractor, while the flagship lifting foams have helped many contractors reduce volume usage while eliminating call-backs. From the Polybadger machine that fits into a pickup truck, to custom boxtruck and trailer rig buildouts, Alchemy-Spetec is widely considered the premier geotechnical chemical grout & equipment supplier. With the additions of ground penetrating radar and penetrometer equipment and support, Alchemy-Spetec is truly on the cutting-edge of the chemical grouting industry.

Tech Support:
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Revision Date: July 11, 2022 6:04 pm