

ACID Magic®

MULTI-USE FORMULA

INDUSTRY

Municipal Recreation / Aquatic Facility Management.

ENVIRONMENT

The Montclair Recreation Center in Denver operates a high-volume, heated leisure pool that serves a broad community. Continuous operation and strict safety regulations demand effective water chemistry control and equipment protection.

CHALLENGE

Maintaining proper water balance in an indoor facility is critical to both safety and equipment longevity. High pH and calcium levels can lead to calcium carbonate scaling on heat exchanger elements. This scale buildup acts as an insulator, forcing heaters to work harder, potentially leading to overheating and failure. Facilities must also remain compliant with health regulations while minimizing downtime and labor costs.

SOLUTION

ACID Magic® Advanced Formula is a phosphate-free, NSF/ANSI Standard 50-certified cleaner that matches the pH-reducing strength of traditional acids while offering significantly improved handling safety. It emits up to 90% fewer fumes and does not burn intact skin, making it ideal for public aquatic environments.



**90% Less Vapors
Won't Burn Intact Skin**

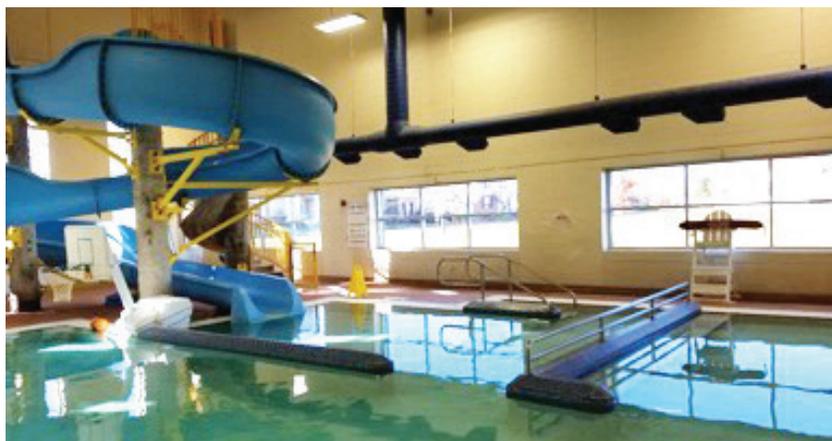
**No Phosphates or Phosphorus
Containing Ingredients!**

Montclair Recreation Center Leisure Pool Denver, Colorado

OVERVIEW

To address persistent scaling issues, ACID Magic® partnered with **CEM Sales & Service**, a commercial pool service provider, for a four-month trial. A 55-gallon drum of ACID Magic® was installed at the Montclair leisure pool, replacing the previous product. CEM inspected and photographed the pool's heat exchanger before the switch to document baseline conditions, including visible scale buildup and chemical data.

Throughout the trial, the pool remained fully operational—no draining, shutdowns, or additional labor were required—demonstrating the product's compatibility with high-use aquatic systems.



Montclair Recreation Center Leisure Pool



CEM dismantled the heater to inspect the heater inlet and outlet tubes.

RESULTS

After four months of use, CEM technicians dismantled the heater for visual reinspection. The photos revealed a dramatic reduction in scale and clearer copper tube walls. Previously obscured surfaces were now visible, with smoother, more uniform wear and far less debris accumulation. Some remaining scale flakes had dislodged and collected inside the heater, showing the cleaning process was actively lifting buildup.

Chemical data also supported these observations:

- Phosphate levels dropped by at least 1,500 ppb, falling to 1,000 ppb—well below the test kit's upper limit of 2,500 ppb.
- Calcium hardness levels improved.
- No increase in labor or disruption to service was reported.

"The phosphate reading dropped by at least 1,500 ppb. That's huge—our test kit maxes out at 2,500 ppb. This is extremely encouraging."

— J. Doney, CEM Sales & Service

ACID Magic[®]

MULTI-USE FORMULA

BASELINE MEASUREMENTS

Chemistry Measurements	Ideal Range	November
pH	7.2 to 7.8	7.3
Alkalinity	80 - 120 ppm (mg/L)	40 ppm
Calcium Hardness	200 - 400 ppm (mg/L)	600+ ppm
Phosphate	0 to < 100	2500+ ppb

POST-TRIAL MEASUREMENTS

Chemistry Measurements	Ideal Range	March
pH	7.2 to 7.8	7.7
Alkalinity	80 - 120 ppm (mg/L)	65 ppm
Calcium Hardness	200 - 400 ppm (mg/L)	300 ppm
Phosphate	0 to < 100	1000 ppb

VISUAL INSPECTION FINDINGS

Photos taken in March of the inlet, midsection, and outlet tubes revealed a notable improvement compared to images captured at the start of the trial. While some buildup remained, it was visibly thinner and more uniform, with significantly fewer piles of debris. The previously obscured copper walls were now largely exposed, suggesting reduced scale, restored water flow, and improved heat transfer.

In areas where scale was still present, it appeared as a smooth, discolored film, rather than thick, flaking deposits. Some residual debris seen in the images was scale that had detached from the tubing and become temporarily lodged inside the heater—evidence that the cleaning process was actively breaking down old deposits.

These findings confirmed a dramatic reduction in scale and corrosion risk, reinforcing the product's effectiveness in a high-demand aquatic environment.

INLET TUBE BEFORE AND AFTER:

Initially coated in thick, uneven scale with visible flaking, the inlet tube showed significant improvement after treatment. The buildup was visibly reduced, revealing large areas of exposed copper. The remaining deposits appeared much thinner and more uniform.



MIDSECTION TUBE – BEFORE AND AFTER:

Before treatment, the midsection tube was heavily coated with mineral deposits, leaving little visible copper and likely restricting water flow and heat transfer. After treatment, the buildup was visibly reduced and more uniform, with an even wear pattern replacing the patchy flaking. Some smooth scale remained but no longer posed a performance or operational risk.

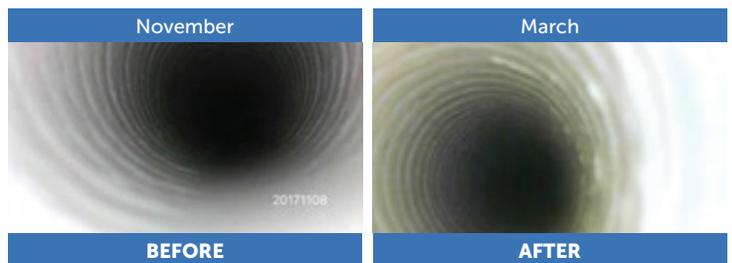


“Worth noting are the piles of debris seen in some of the pictures. This is scale flake that had fallen off of the tube and was in the process of rolling out of the heater until it became lodged.”

— J. Doney, CEM Sales & Service

OUTLET TUBE – BEFORE AND AFTER:

The outlet tube initially showed heavy scale buildup and piles of debris, creating a risk of blockages and reduced heater efficiency. Post-treatment images reveal a much cleaner surface with most loose scale dislodged. The remaining deposits appear as a smooth, discolored film, indicating the buildup is thinning rather than flaking—suggesting improved water flow, heat transfer, and ongoing scale removal.



CONCLUSION

The Montclair trial confirmed that ACID Magic[®] delivers exceptional cleaning performance and system protection in a real-world, high-demand aquatic facility. It effectively reduced phosphate and calcium levels, eliminated harmful scale, and maintained heater efficiency, all without operational interruption or added labor.

ACID Magic[®] is a safer, more manageable alternative to traditional muriatic acid, offering consistent, professional-grade results in municipal, commercial, and public pool environments.

ABOUT CEM SALES & SERVICE

CEM Sales & Service is a family-owned company based in Sheridan, Colorado, specializing in commercial swimming pool services across the Rocky Mountain region since 1984. CEM provides a comprehensive range of products and services for commercial aquatic facilities.

ABOUT ACID MAGIC[®]

ACID Magic[®] is manufactured by MicroCare, LLC in Commerce City, Colorado. It is a full-strength hydrochloric acid product that has been specially formulated with proprietary buffering agents. These agents significantly reduce the acid's fuming and corrosiveness, making it safer to handle compared to standard muriatic acid.