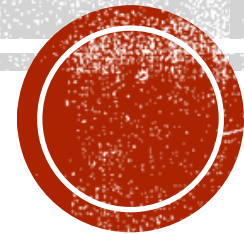


ONLINE SOFTENER MONITORING

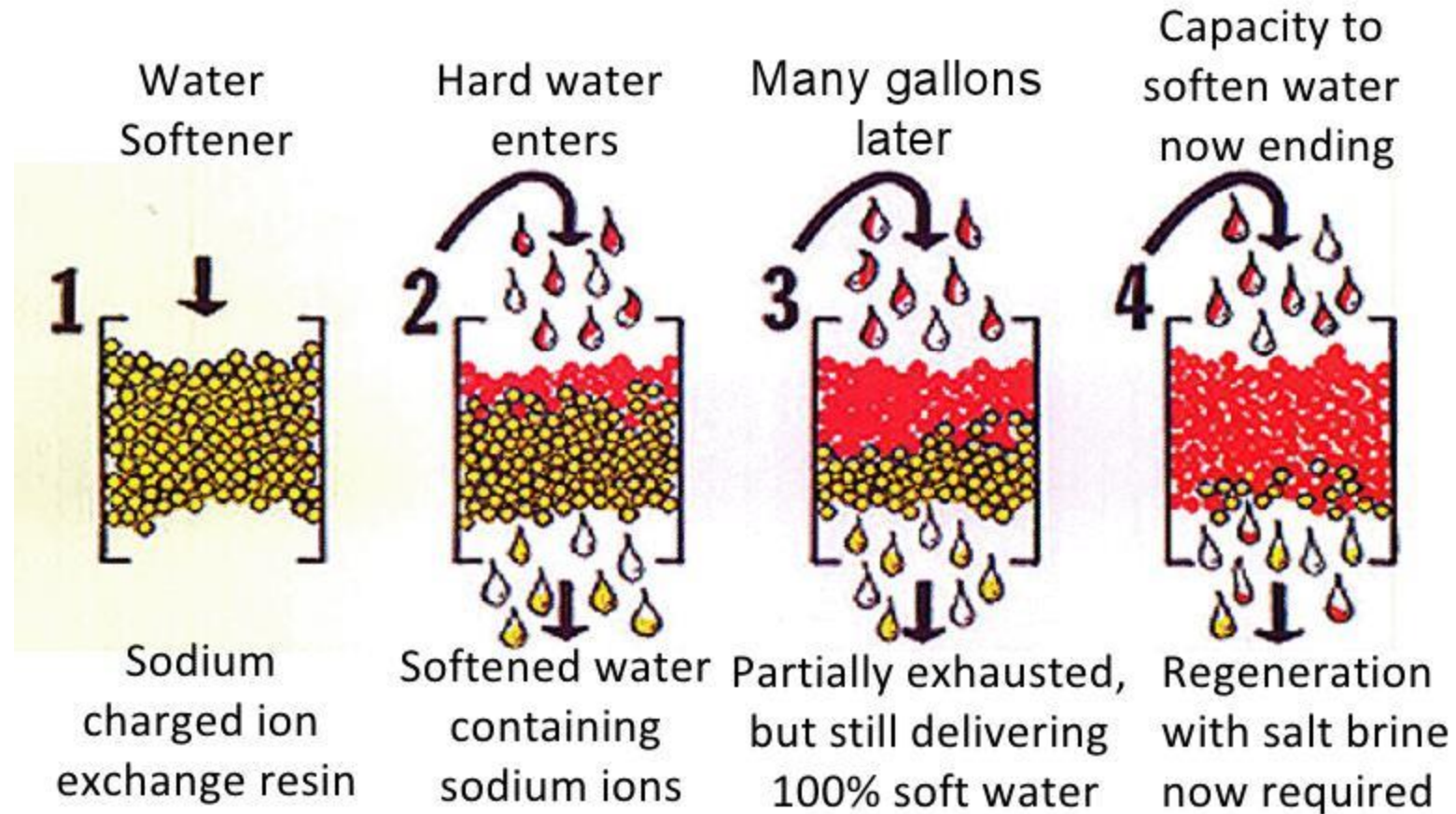
Neil Klingensmith

Emonix



How Water Softeners Work

SOFTENING CYCLE



BUT HERE'S THE THING

- We don't actually know if the water coming out is soft.
 - Different wells have different levels of hardness.
 - Resin deteriorates over time.
 - Etc.
- So, to be safe, people typically regenerate 10-30% more frequently than they should.
- Regenerating too frequently wastes salt





HOW DO WE COMPUTE CAPACITY?

Amount
of Resin

Resin Capacity

Feed Water
Hardness

Theoretical
Capacity

$$2 \text{ ft}^3 \times \frac{100 \text{ g CaCO}_3}{\text{ft}^3} \times \frac{\text{gal}}{0.1 \text{ g CaCO}_3} = \cancel{2000} \text{ gal}$$



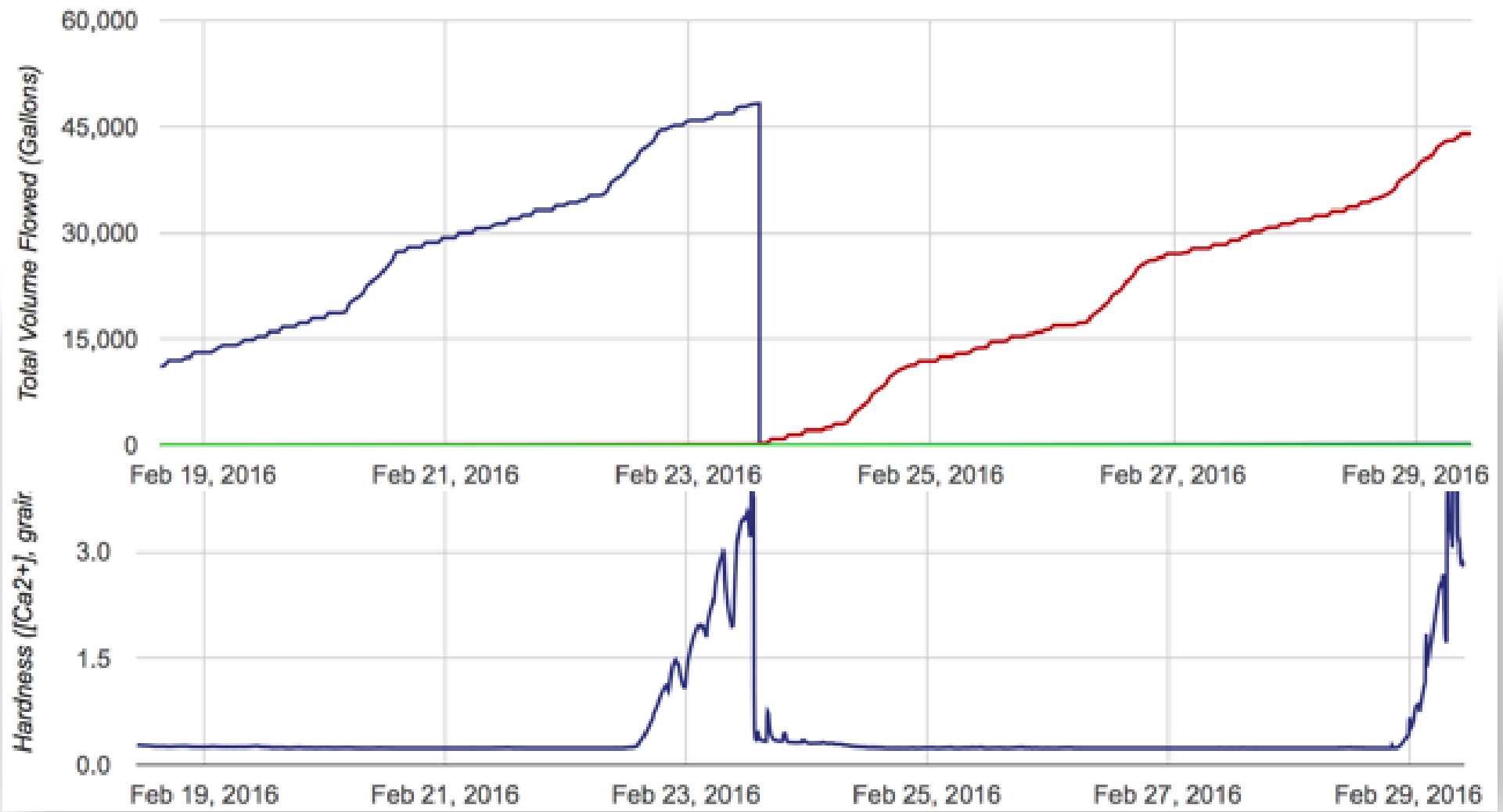
Variable



Variable

1500 gal







Culligan Aqua Sensor

~ \$500?



Hach Autotitrator

~ \$2500



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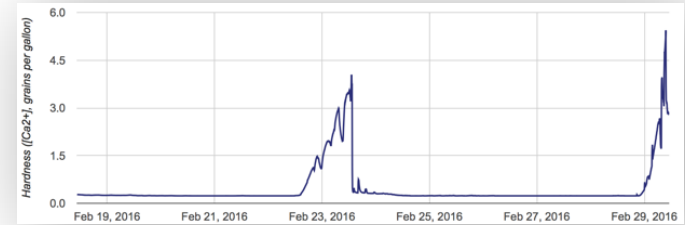
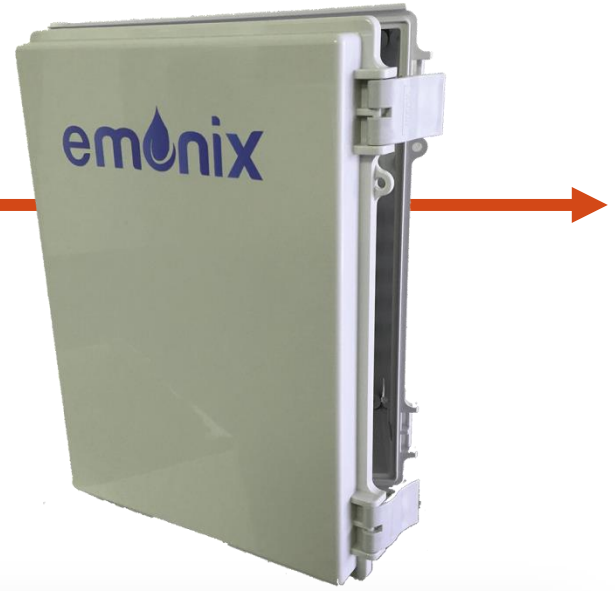
~ \$2500

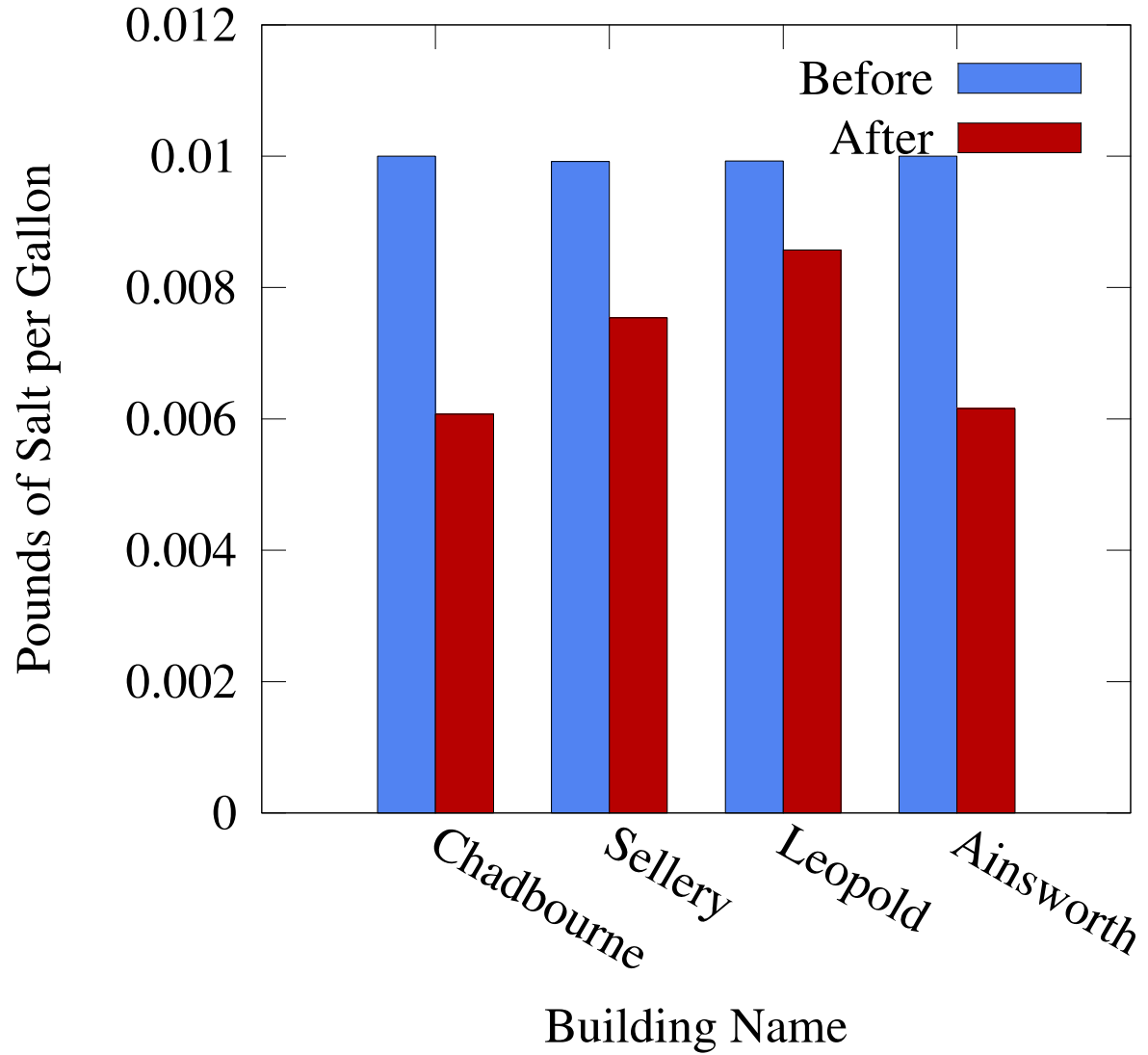


Hard Water from City

Soft Water to Building

Regeneration Signal





Average savings 27%

Money saved \$1500-\$3000 per year

