2015 VWEA Education Seminar
Water Reuse Services

Bringing Game Changing Innovation Home to Virginia
Our Customers Used to be Fish

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So, the customers have phones

- Demands on system – peaking issues with service shut down notification
- How do you communicate with multiple customers that have high demands?
- Elective system – reclaimed water is considered as a secondary source
- Customers do not perceive the product as secondary and have issues with loss of service – even if provided adequate notice.
DATA CENTERS

• Data centers can be thirsty beasts, consuming enormous amounts of water in cooling systems that keep servers humming along comfortably.

• This can be a challenge when data centers cluster together around key Internet intersections. With uptime as a key priority, the water supply must be “always on” just as the servers must always be on.
Two Business Days

• A planned shut down of service requires two business days of notice

• So, what happens during that 48 hours?
Normal Day
1800 gpm
How is your chlorine working?
You now have a water distribution system

What do you know about water distribution?
How a Reclaimed leak is different than a Potable water leak.
Have a Leak?

In 24 hours you must notify:

• Downstream Water Plant
• DEQ
• VDH
What happens if I turn this valve?

Where are your points of failure?
My boss said, “go turn that valve”

No Dig Restrictions
50 Cents Holding up a Dollar
So, we built this!
And then, we put the same valve in it. Fortunately, our Maintenance staffed spotted the valve and the issue was corrected.
Reclaimed line flushing is different than Potable hydrant programs

• Size does matter

• Location is important
It’s on **what** page of the permit?

• What do you know about your customer’s business?
What is Molybdate?

• Used for corrosion control in cooling towers
Water Vs. Reuse

• How is Reclaimed water different from the Potable water being supplied?
Thank you!
The Green Grid

• A nonprofit, industry consortium of end-users, policy-makers, technology providers, facility architects, and utility companies collaborating to improve the resource efficiency of data centers.

• As business demands increase, so does the number of data center facilities which house a rising amount of IT equipment. Data center managers run into resource limits on electrical power, cooling, and space.
The Green Grid

• The Green Grid came out with a Water Usage Effectiveness (WUE) metric, a key performance indicator. Data center providers began to take into account their hydro footprints, and the relationship among it and Power Usage Effectiveness (PUE).
Water Metrics Enter the Spotlight

• In 2012, Facebook released its initial data on water usage effectiveness in Prineville, Oregon. Facebook believed this established a good benchmark for other users running large facilities: **0.22 liters per kilowatt**. The WUE metric was developed by the Green Grid as a way to extend its focus on efficiency beyond power.

• The Green Grid announced that the bar had been set once Facebook announced its numbers.
Cooperative Nature

• A Google data center in Atlanta uses recycled wastewater to cool thousands of servers housed in the facility, and then purifies the excess water so it can be released into the Chattahoochee River. Google also financed the building of a “sidestream” treatment plant for the Douglas County Water and Sewer Authority (WSA).

• In a move that saved millions of gallons of potable water for the local community, Microsoft has teamed with the city of Quincy, Washington to retool the city’s water treatment infrastructure. The partnership was laid out in 2011. The company leases a water treatment plant out to the city for $10 a year as part of a partnership to develop a more sustainable water supply in Quincy.