

FYI in 45

The Power of Peracetic Acid

Panelists:

Sarah Stewart

Brian Hilts

Moderated by:

Andrew Beaton

February 15, 2019



**CDM
Smith**

Today's Discussion

- ▶ Benefits and challenges of PAA
- ▶ Key drivers behind the rise of PAA
- ▶ A look at the regulatory climate
- ▶ What to consider if you're considering PAA

Our Panel



Sarah Stewart, PE
Associate, Environmental Engineer



Brian Hilts, PE
Environmental Engineer



What is PAA and Why is it Effective?

When to look into PAA



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When to look into PAA

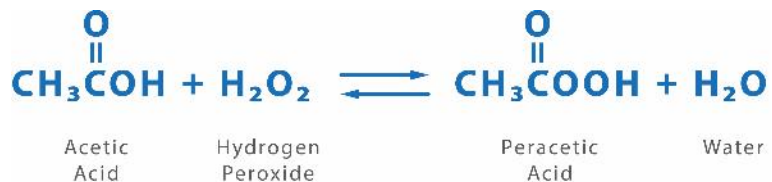
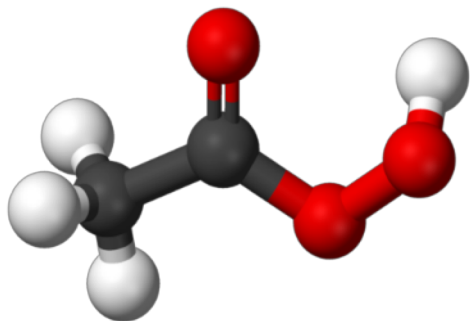
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- ☒ Concerned about disinfection byproducts
- ☒ Site where chemical dosing rates have increased

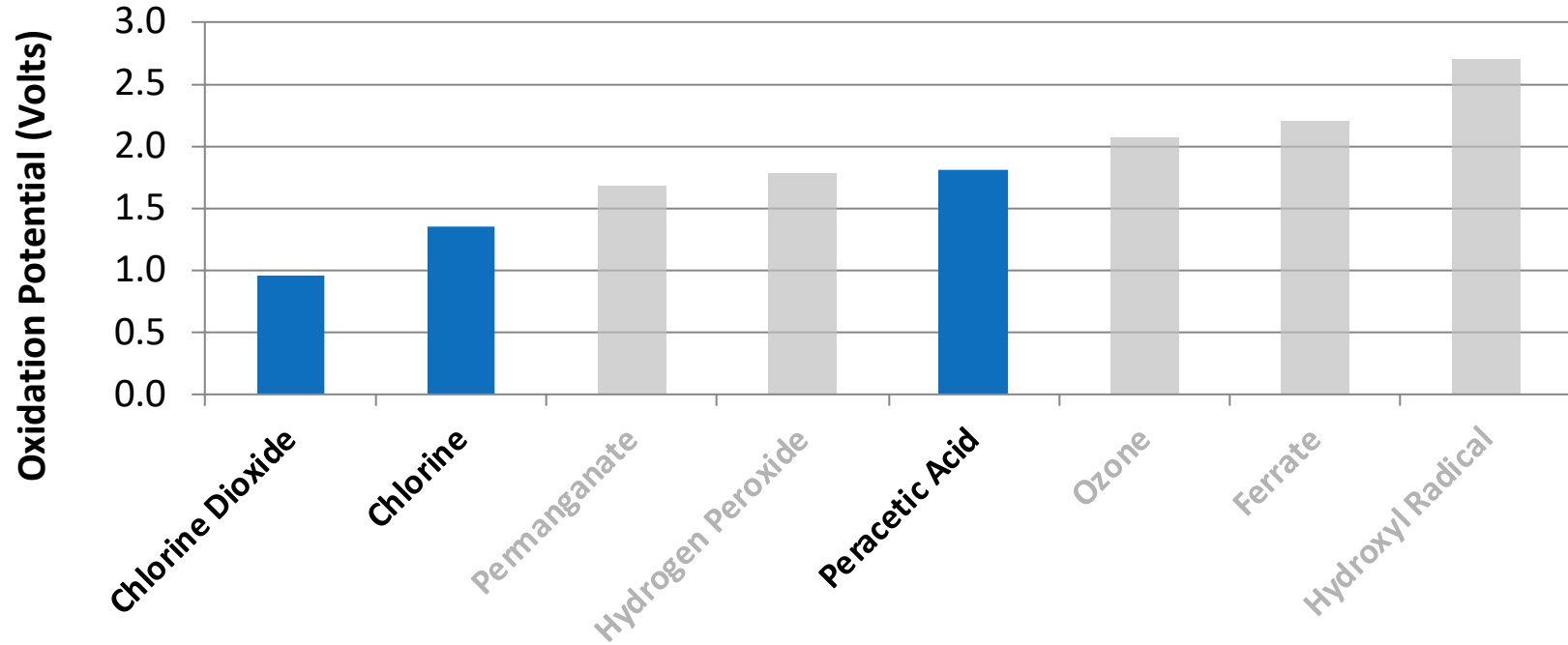


What is PAA



Parameter	Value
Appearance	Light Green Liquid
Odor	Pungent, vinegar-like
Specific Gravity	1.16 g/cm ³
Boiling Point	108°C (226°F)
Vapor Pressure	22 mm Hg at 25°C
Freezing Point	-49°C (-59°F)
Shelf Life	~12 months

Oxidation of Various Chemicals



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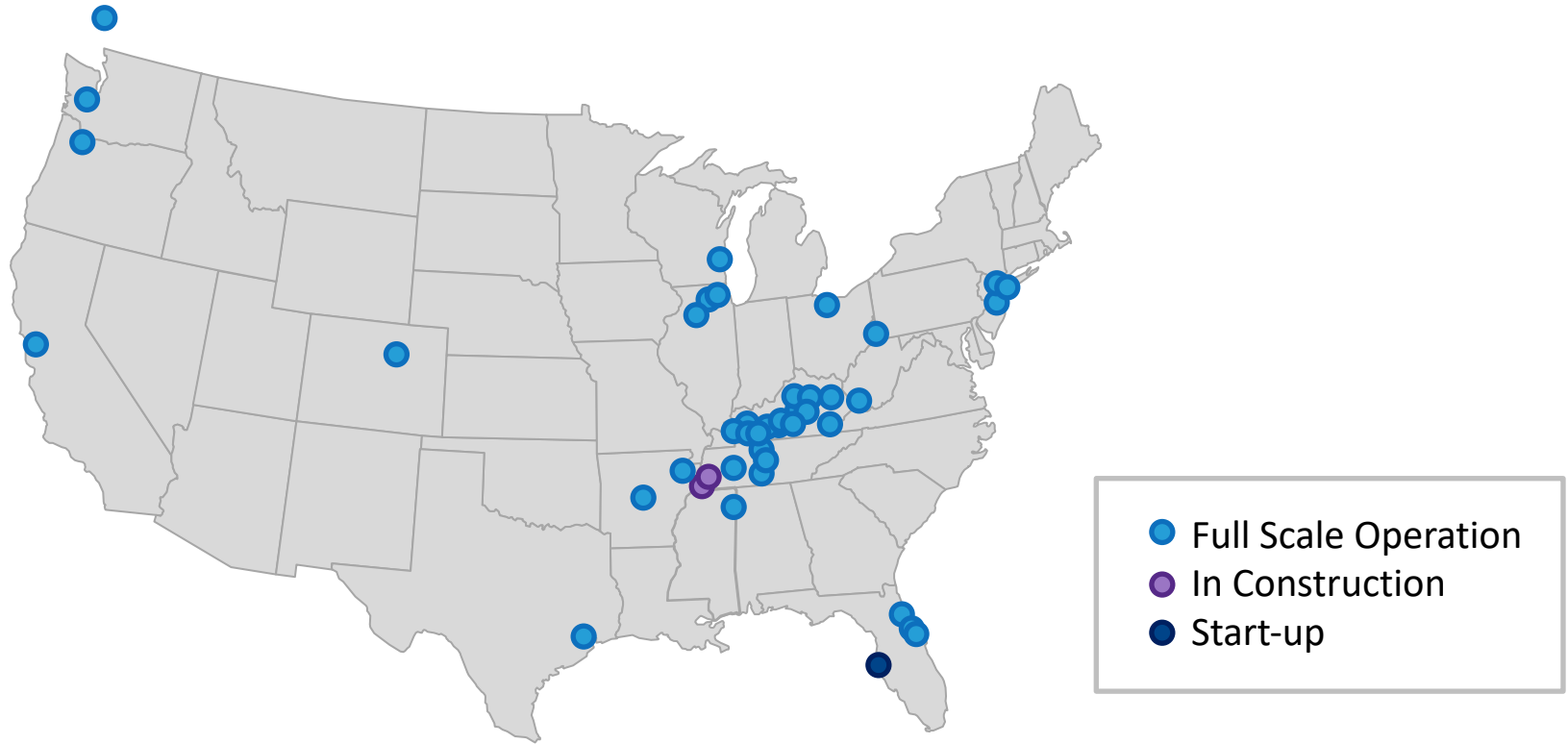
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- ▶ No need for dechlorination step
- ▶ PAA can also be used to supplement existing UV setup

Implementation



Near Houston, TX

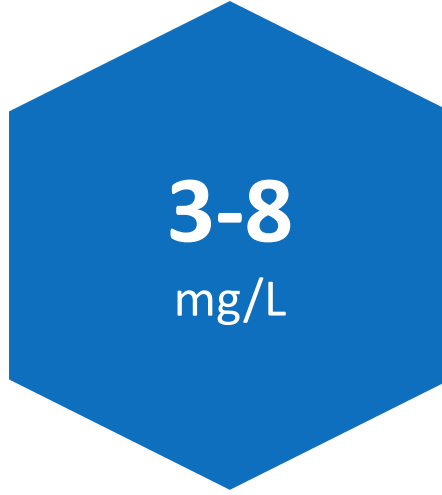




After PAA Implementation



Contact Tank



Dose Range




Savings



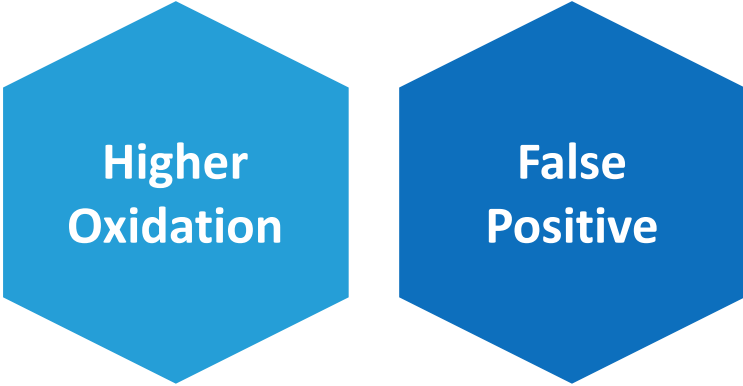
Challenges & Considerations

Potential Challenges



**Higher
Oxidation**


Potential Challenges



**Higher
Oxidation**

**False
Positive**

Potential Challenges



Higher
Oxidation

False
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Water
Quality

Potential Challenges



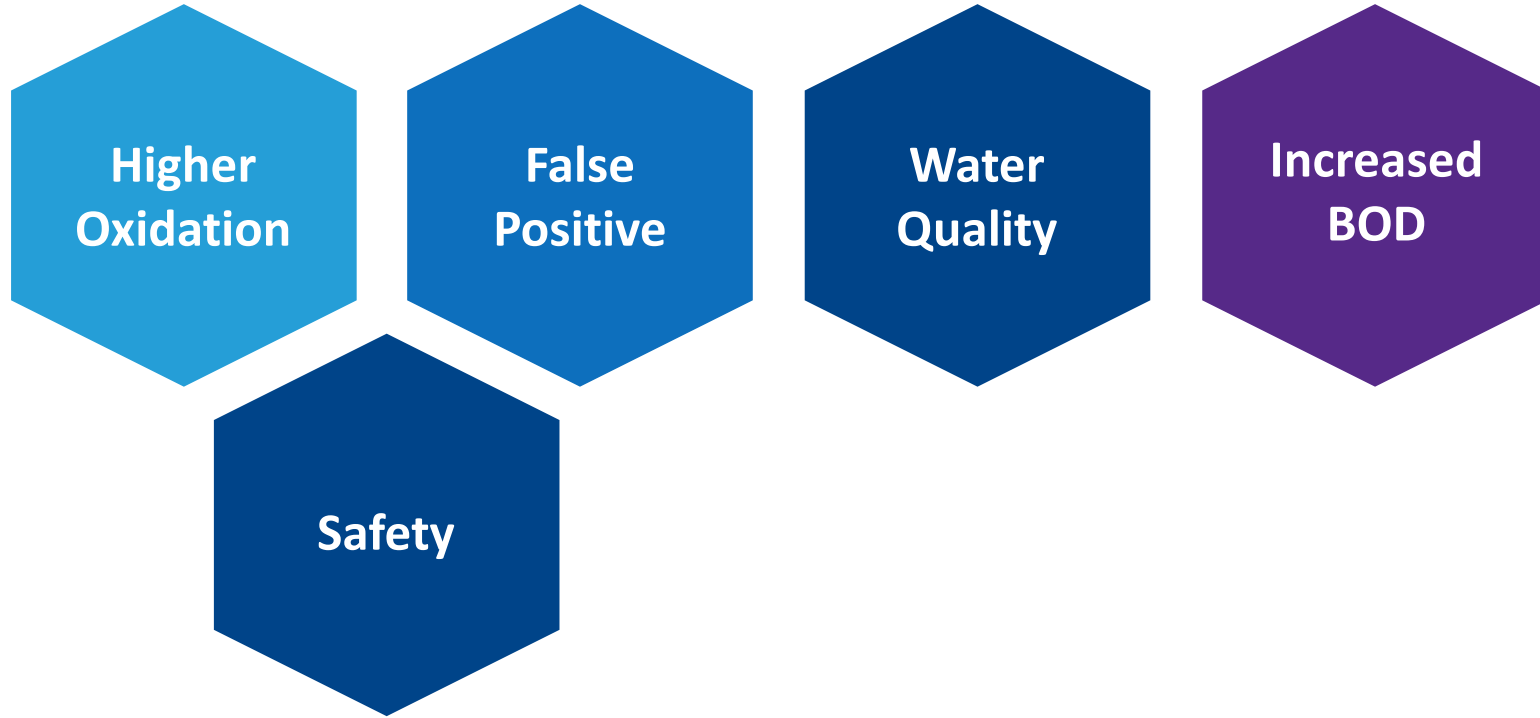
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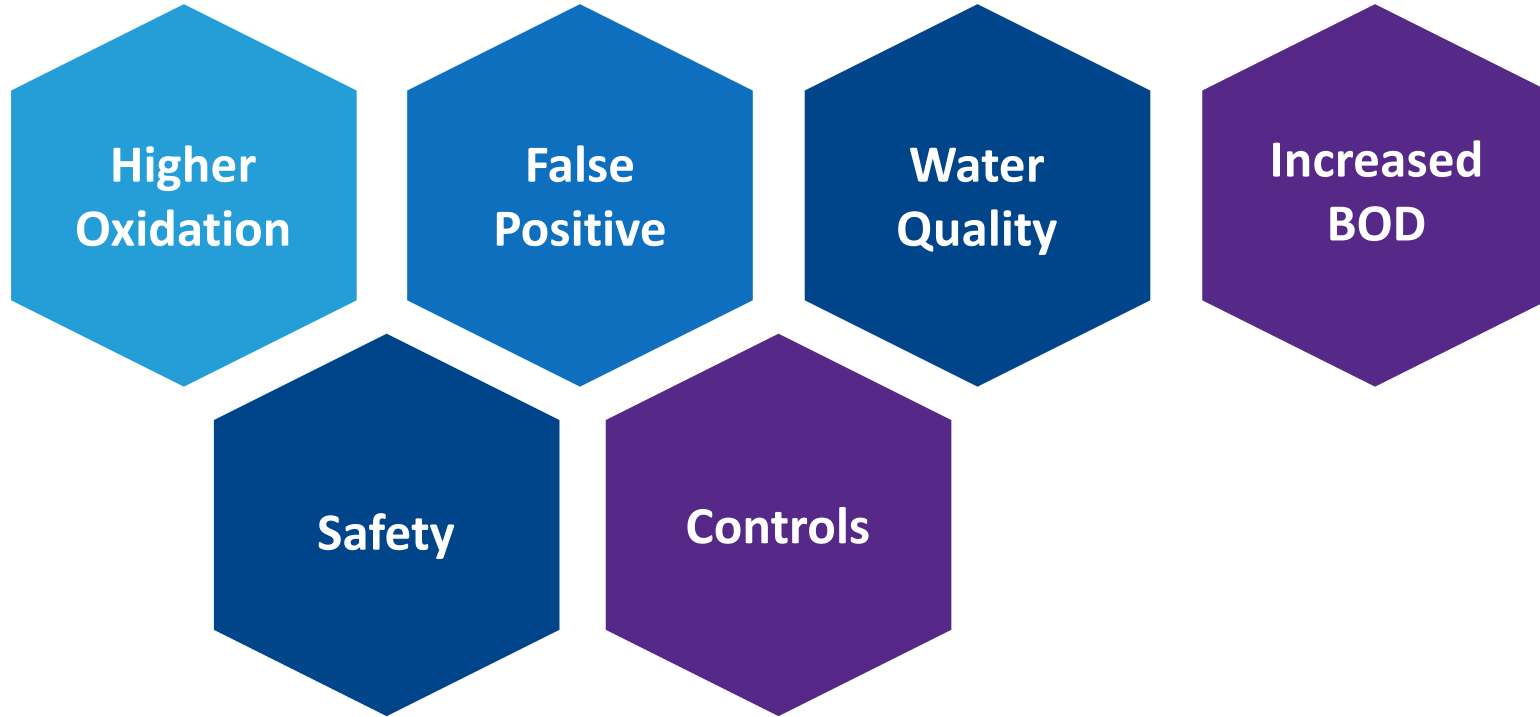
Water
Quality

Increased
BOD

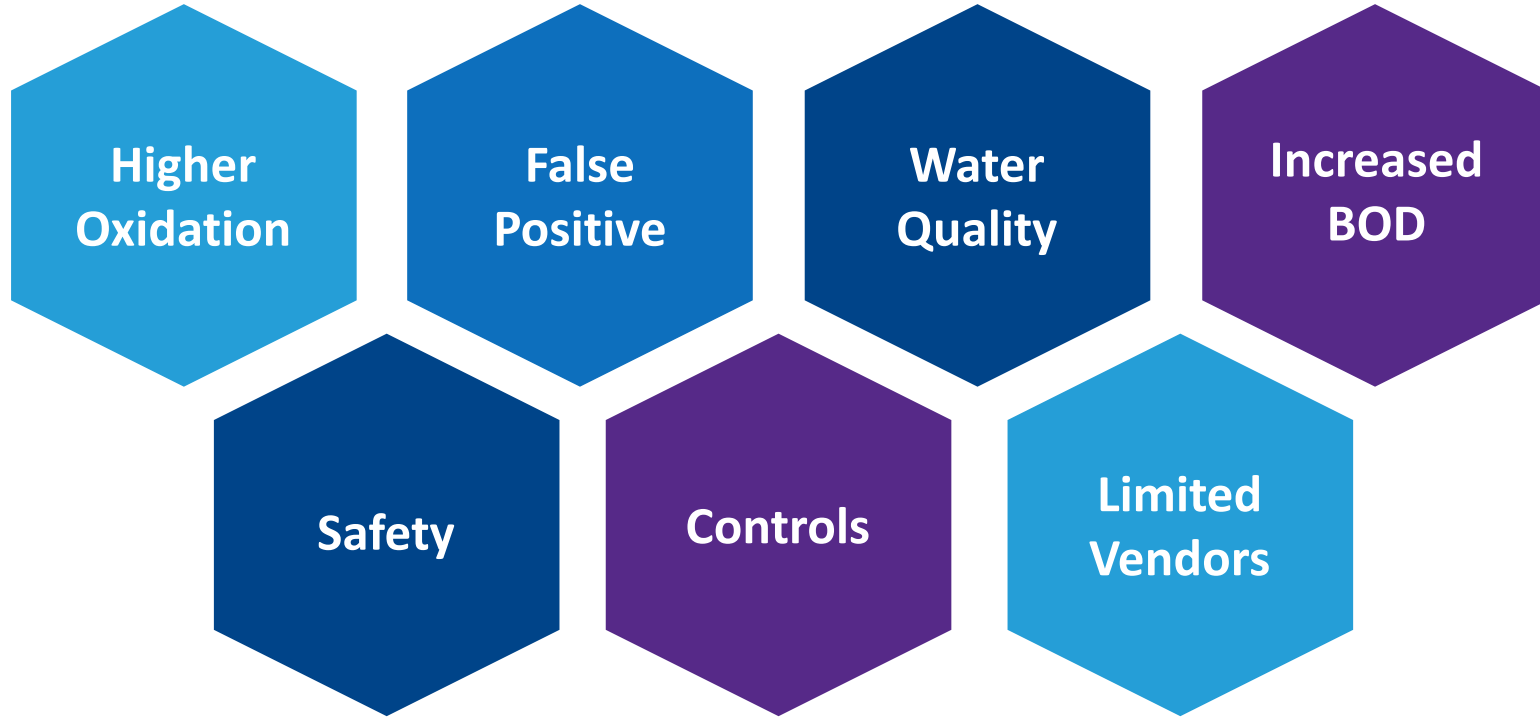
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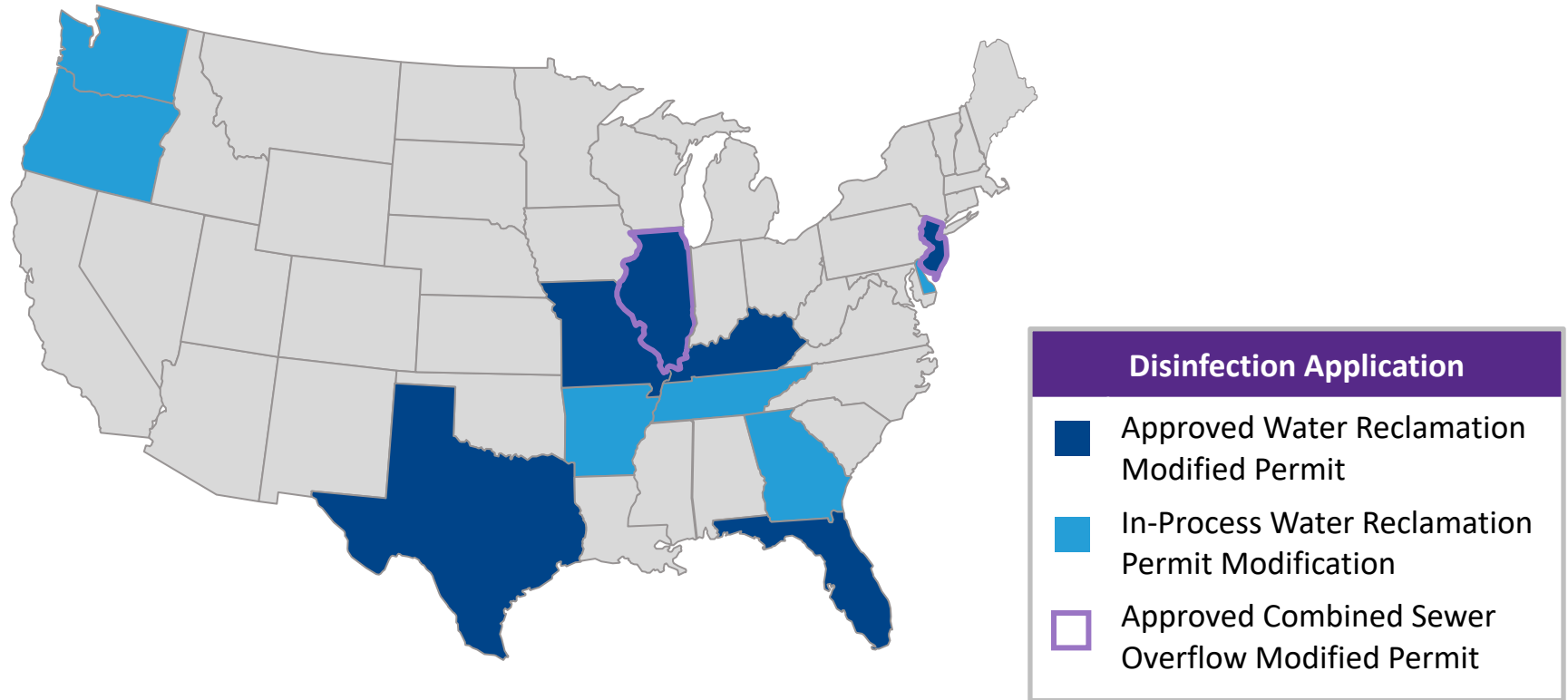
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The Regulatory Landscape

Regulatory Acceptance







CASE STUDY

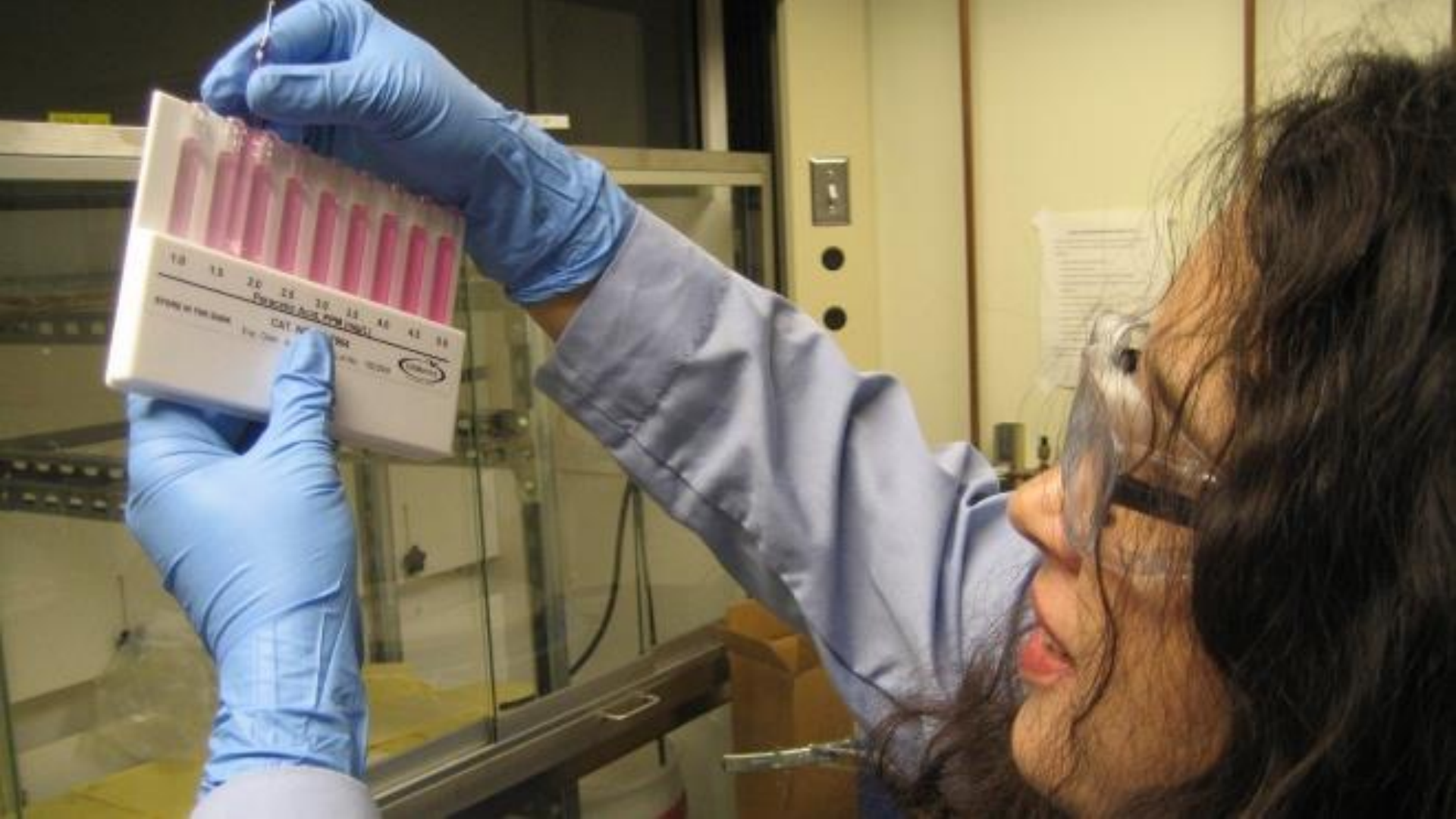
Memphis PAA Upgrades

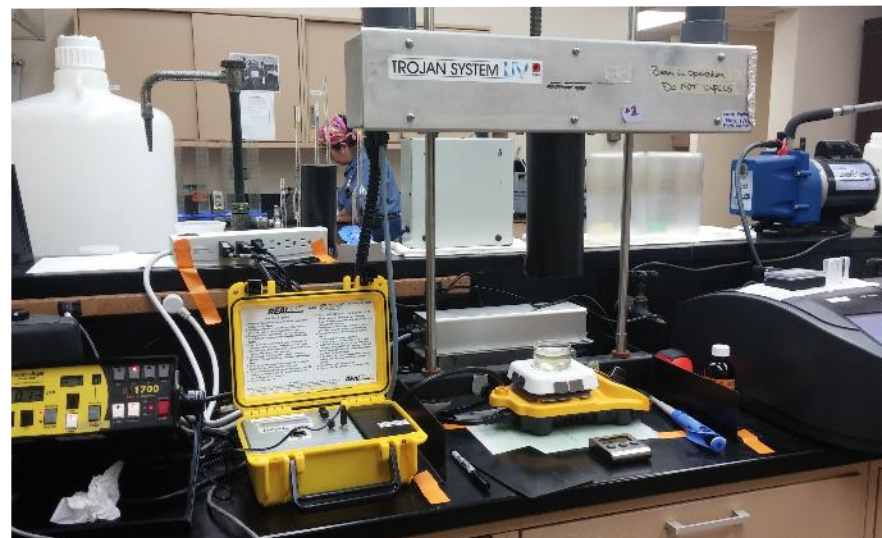
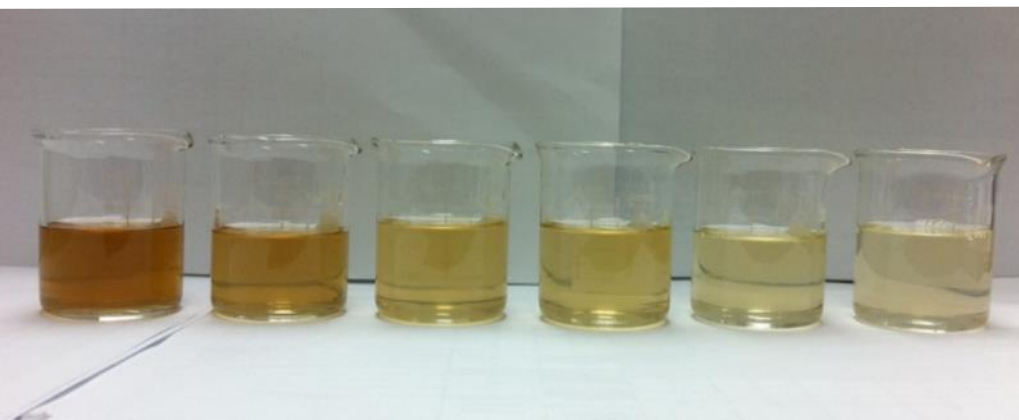
M.C. Stiles WWTF



T.E. Maxson WWTF



















What to Consider if You're Considering

Advice for using PAA

Start collecting data now

 Frequently to understand your system

 The longer you collect the better

Advice for using PAA

- ☒ **Start collecting data now**

- ☒ Frequently to understand your system

- ☒ The longer you collect the better

- ☒ **Talk to your regulator**

PAA Experiment Process



The diagram illustrates the PAA Experiment Process using two hexagonal shapes. The first hexagon, on the left, is light blue and contains the text 'Collect Data'. The second hexagon, on the right, is a darker blue and contains the text 'Bench-Scale Testing'. Both hexagons are outlined in white and are positioned side-by-side.

Collect Data

**Bench-Scale
Testing**

PAA Experiment Process



Collect Data

**Bench-Scale
Testing**

**Water
Sample**

PAA Experiment Process



Collect Data

**Bench-Scale
Testing**

**Water
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Pilot Testing



What's Next for PAA



WEF's official book on PAA





Questions & Answers

Contact Information

Panelists



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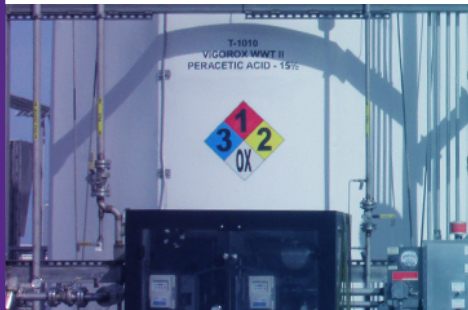
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Thank You