

Water Disinfection Conversion – Chlorine Gas to On-site Sodium Hypochlorite Generation



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Vancouver Overview

Vancouver's Story

- Oldest community in Washington, 3rd Largest Water Utility
 - * settled in 1825, incorporated 1857, (statehood 1889)

- Infrastructure -

 - Streets – 1,900 lane miles

 - Sewer- 773 miles (est. 1890)

 - Water -1,051 miles, 10 Bgal/yr

 - Surface Water – 609 miles

 - Streetlights -17,000

 - Traffic Signals - 211



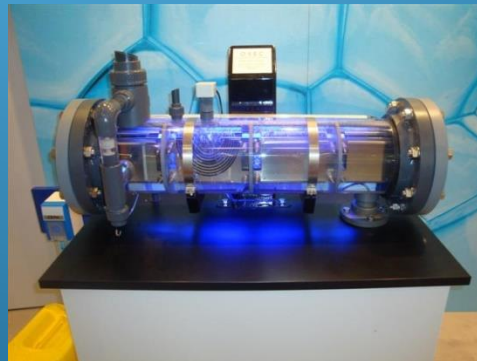
Change Forces

- All production facilities utilize chlorine gas for disinfection.
- All sites embedded in neighborhoods.
- No particular incident sparked the conversion.



Timeline

- 2000 - First Installations (Clortec-OSEC)
- 2005 – Renovated Installations (3)
- 2013 – Standardize Equipment and install at all water stations
- 2015 – Equipment Selection
- 2016 – First purchase of PSI Microclor
- 2018 – Installations Complete (5)
- 2024 – *All installations projected*



Research

Neighboring Utilities - CPU
Manufacturer's Rep
Conferences
Webinars



Salt - Goldilocks

Storage – works well for large



Design Guidelines



- X₃ Pounds Sodium Chloride per 1 # Chlorine
- X₈ Pounds Chlorine to treat 1 MGD to 1.0 ppm
- X₁₅ Gallons of 0.8% hypo solution equivalent to 1 # Chlorine

Form v

Function



Lessons Learned - ∞

Match Topic to Picture

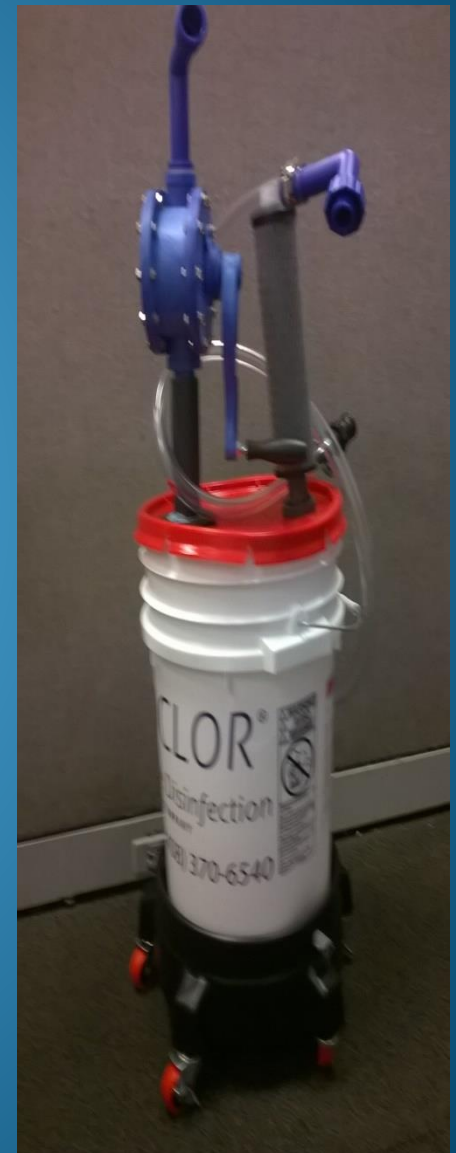
- Pipe Condensation
- Accessibility
- Materials Compatibility
- Research – Accessories
- Research – Water Quality
- Design on Paper



Lessons Learned - ∞

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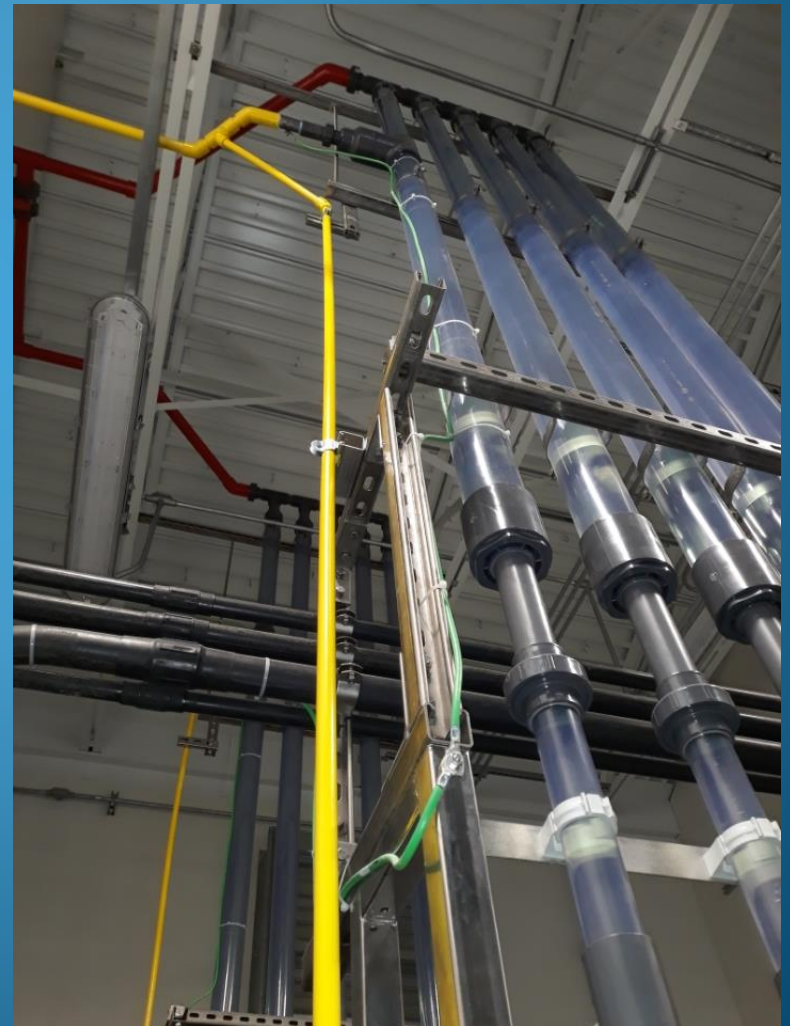
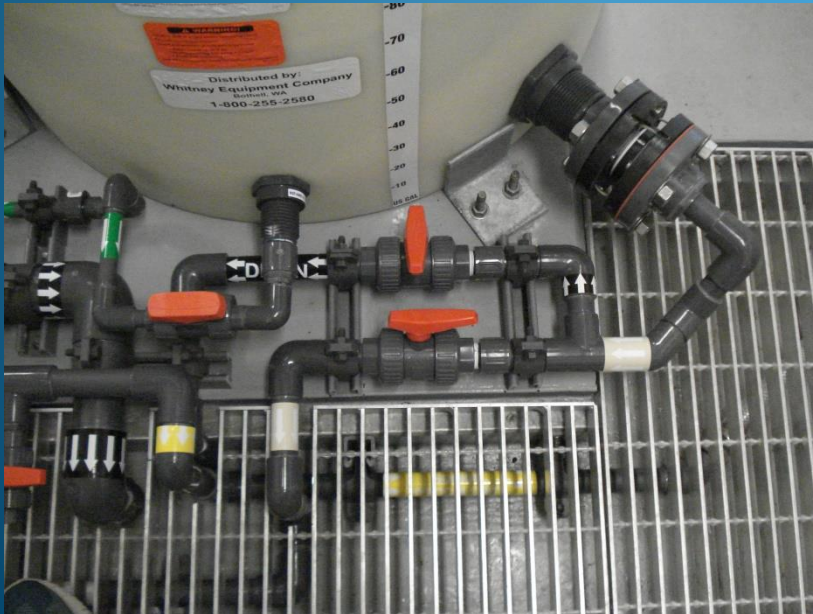
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Lessons Learned - ∞

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Water Disinfection Conversion

QUESTIONS.....?

Thank you!

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