



Eric M.V. Hoek, Ph.D. | Founder & CEO

# IntelliFlux – *Artificial Intelligence*

Self-Adaptive Flux Enhancement & Recovery

Autonomous Vehicle

Adaptive Cruise

Cruise Control

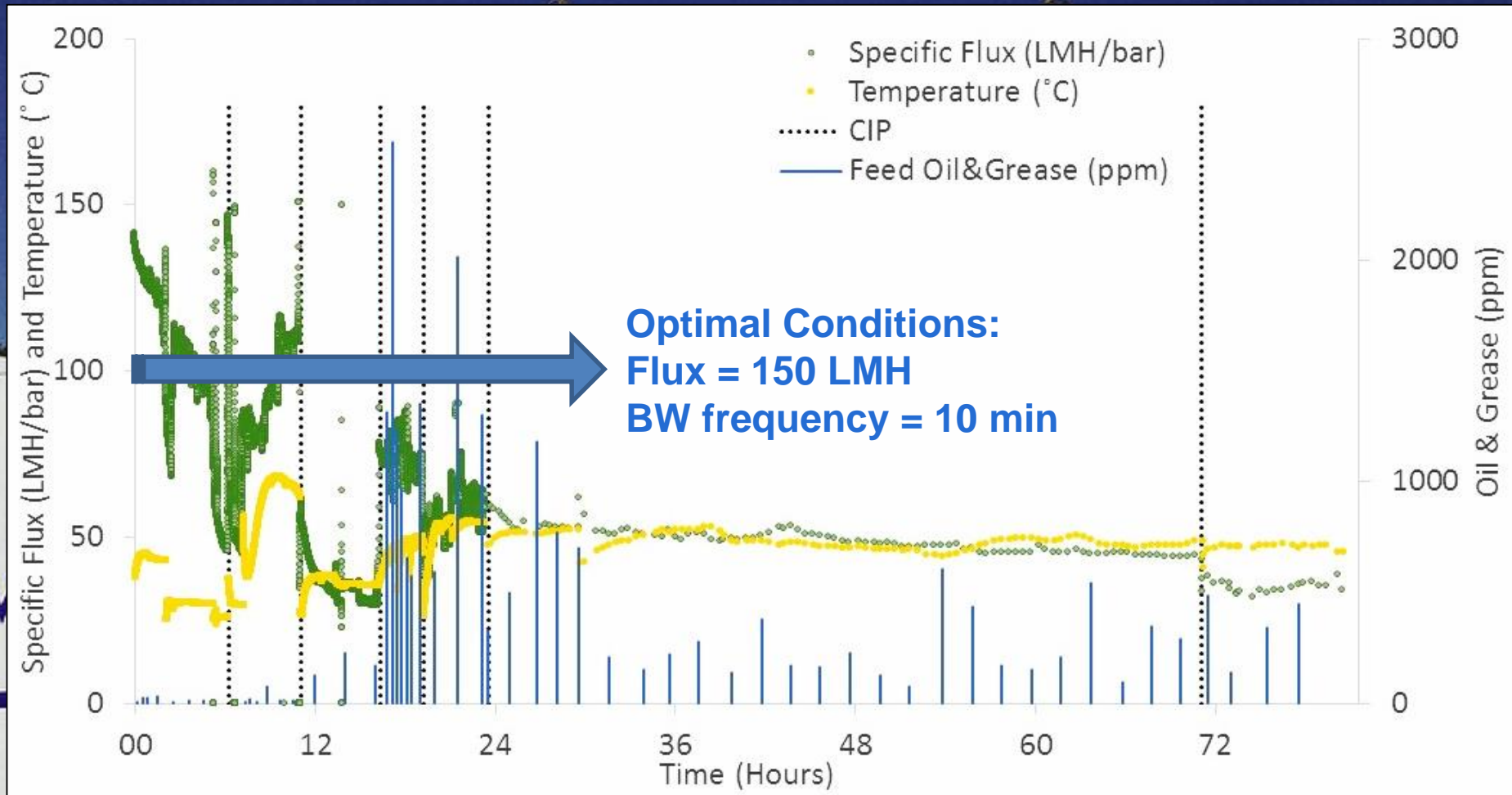
Self-Adaptive Flux Maintenance

Enhanced Flux Maintenance

Standard Flux Maintenance

# IntelliFlux – *Why bother?*

Self-Adaptive Flux Enhancement & Recovery



# IntelliFlux – *How does it work?*

Self-Adaptive Flux Enhancement & Recovery



- *IntelliFlux* controls optimize operating conditions, and decide when & how to back-wash, CEB and/or CIP.
- Artificial Intelligence-based controls integrate with PLC/SCADA systems or PC based controllers.
- Features remote control and monitoring via PCs, notepads & smartphones.

# IntelliFlux – *What does it do?*

## Self-Adaptive Flux Enhancement & Recovery

Specific Energy: **0.054 kWh/m<sup>3</sup>**

Membrane Replacement Due:  
**1687 days**

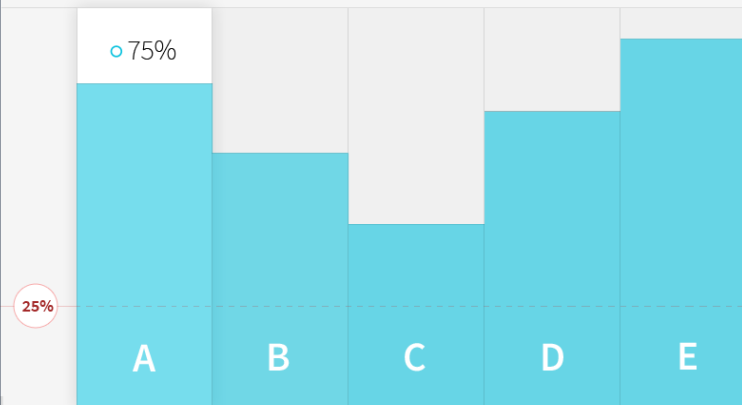
Capacity Utilization: **97%**

60

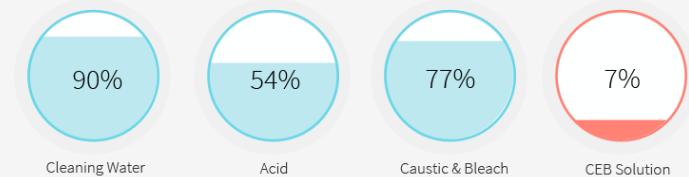
90

40

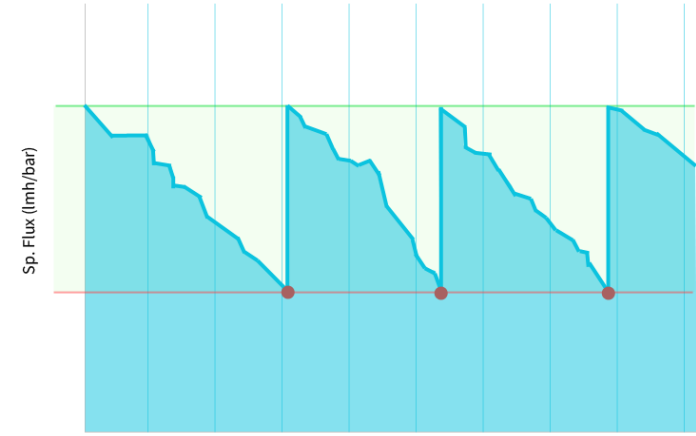
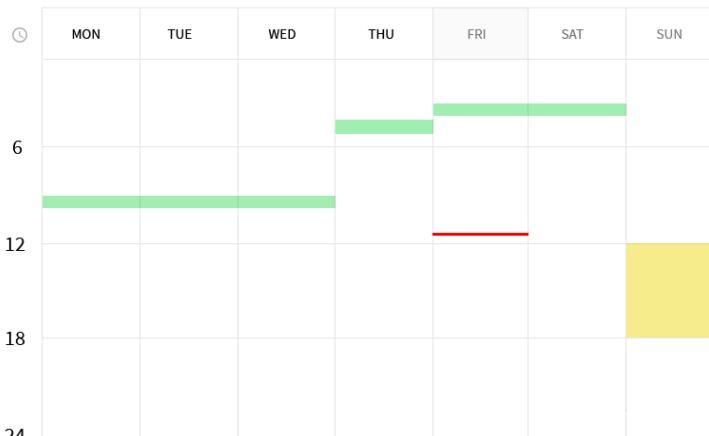
Normalized Specific Flux



Cleaning Status



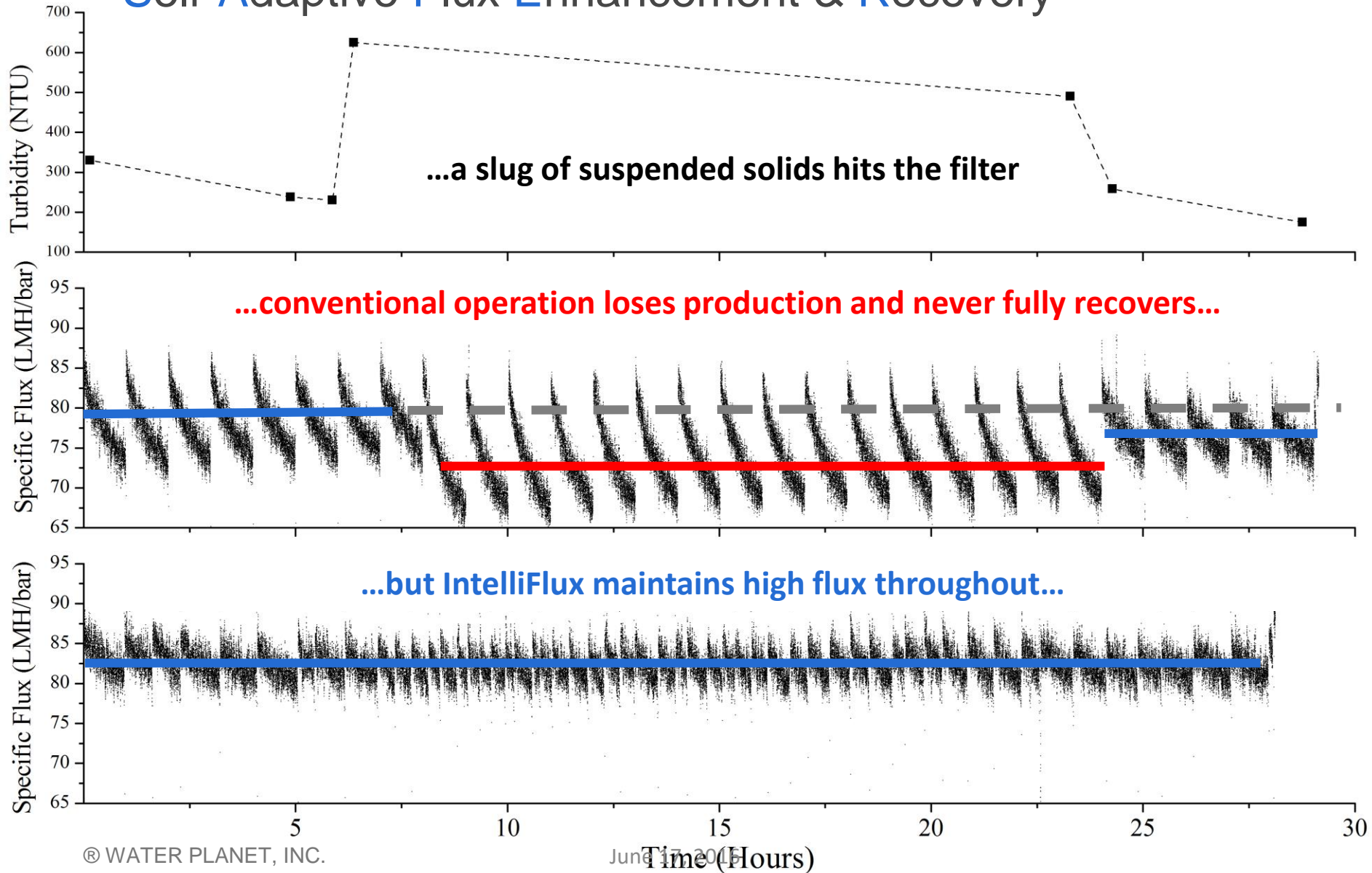
Events





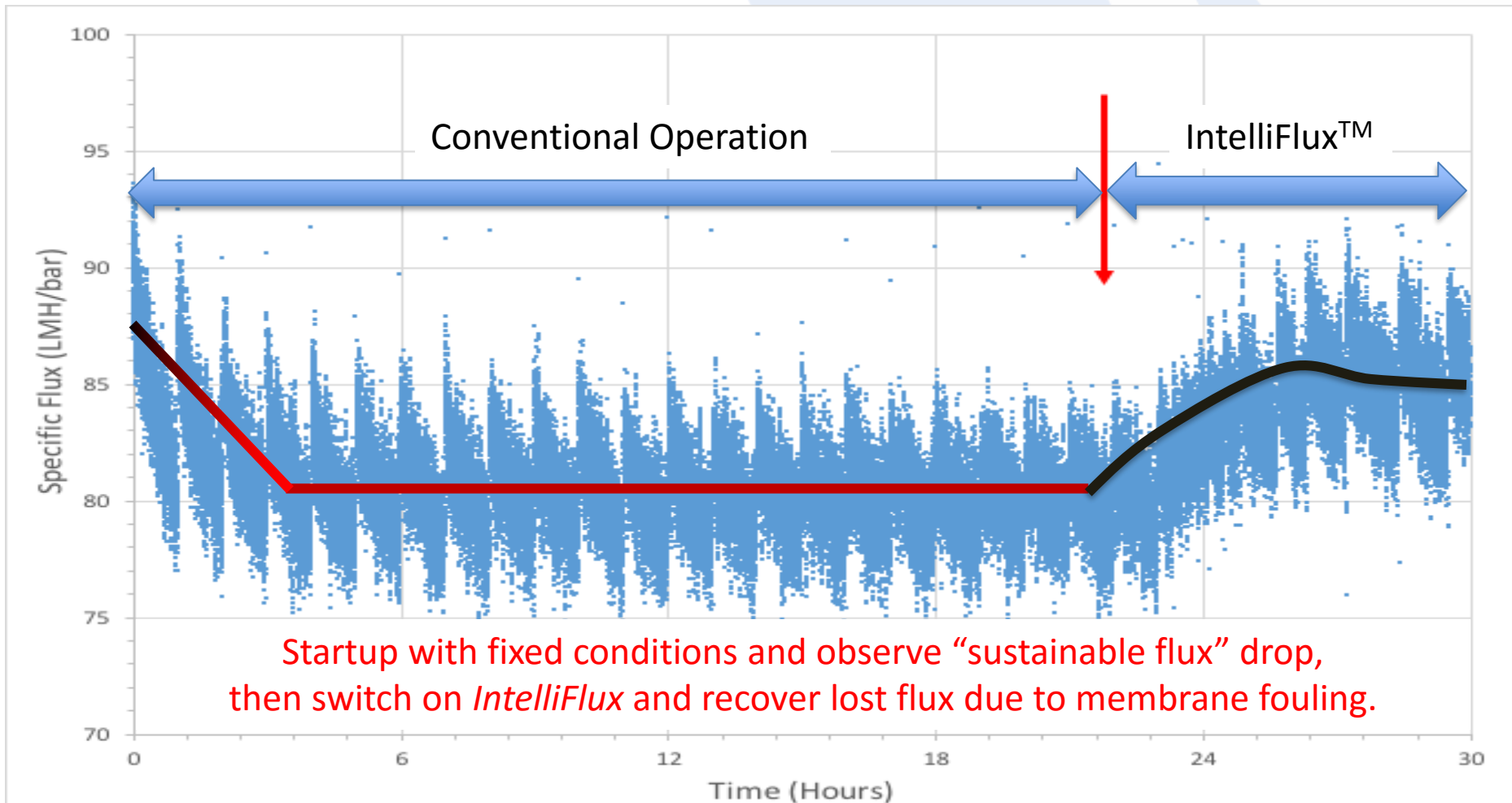
# IntelliFlux – *Maintains High Flux*

Self-Adaptive Flux Enhancement & Recovery



# IntelliFlux – *Recovers Lost Flux*

Self-Adaptive Flux Enhancement & Recovery



# IntelliFlux – *Benefits*

Self-Adaptive Flux Enhancement & Recovery

...a **S.A.F.E.R.** way to operate

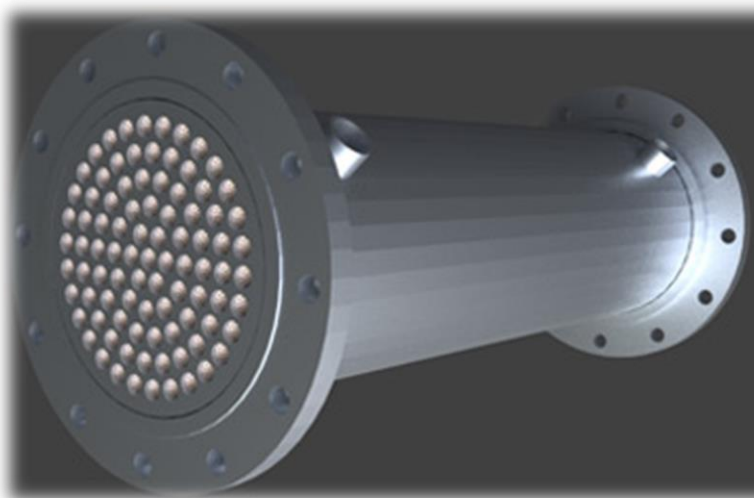
- ✓ **Optimizes production**
  - ✓ Maximize throughput and recovery
  - ✓ Reduce energy, waste and costs
- ✓ **Improves reliability**
  - ✓ Self-optimizes relative to influent variations
  - ✓ Real-time system status reporting
  - ✓ Text based alerts to operators
- ✓ **Predicts membrane replacement**



# IntelliFlux – *Vision*

## Self-Adaptive Flux Enhancement & Recovery

- We want *IntelliFlux*™ to become the global standard for controlling water filtration processes
  - Media & membrane filtration, ceramic & polymeric, MF/UF/NF/RO
- Our initial market focus is difficult to treat, non-traditional waters – anywhere globally
  - Oil & gas, mining, wastewater, seawater, refining, process ind's



# IntelliFlux – *Strategy*

Self-Adaptive Flux Enhancement & Recovery

## IntelliFlux Controllers

Global Sales through Key System  
Integrators & OEM Partners

Direct Sales  
US/Canada

Desalination  
& Water  
Reuse

Municipal &  
Industrial  
WW

Municipal  
Drinking  
Water

Process  
Water &  
Separations

Mining,  
O&G,  
Refining &  
Power

Retrofit  
Services

# Lessons Learned...*after 3 startups*

- Developing technology is very hard...
  - Even harder in the water & energy sectors (conservative)
- If you believe in what you are doing, don't give up
  - The world doesn't want you to succeed, so you must
- Know when its time to “pivot” towards something better
  - You can't predict the thing that sticks, so be an “expert learner”
- Focus, focus, focus

# Contact

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