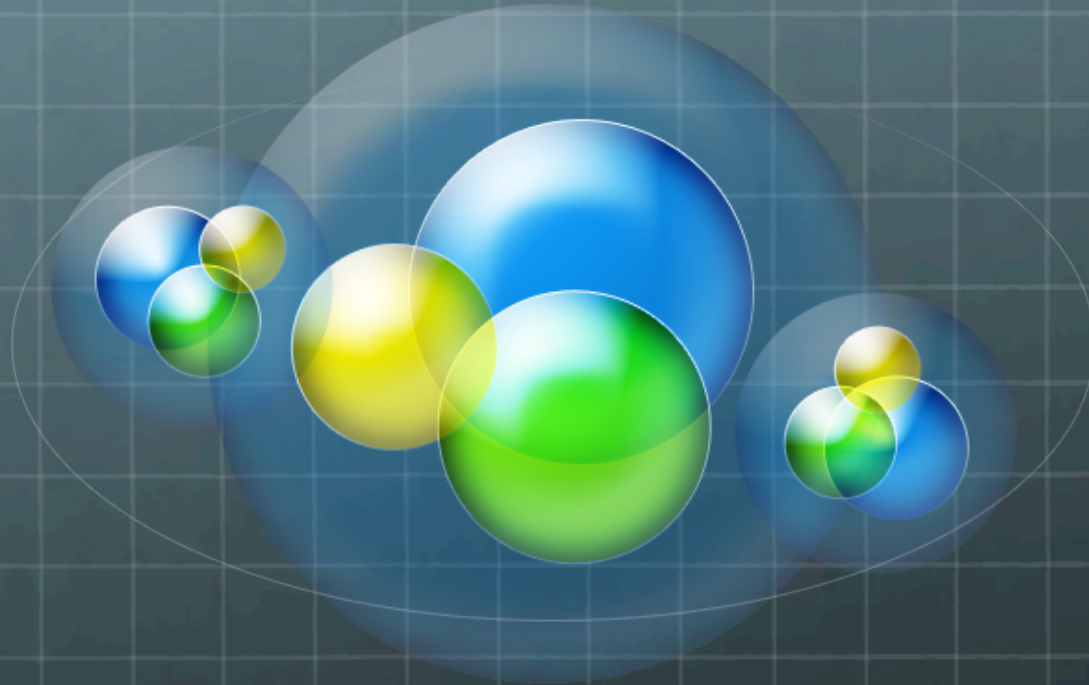


“Novel” technology in the Alaskan Situation




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“Novel”

 From Merriam-Webster Dictionary Online

“new and not resembling something formally known or used”

Truly “novel” technologies

- Nanoparticle impregnated sorbents/ion exchangers
- Advanced Oxidation processes
 - Hydroxyl radical promoters
 - Plasmon oxidation
 - E-Beam
- Exotic disinfectants
- Exotic membranes

These are not likely the technologies rural AK needs...

Risk

- Truly “novel” technologies have inherent risk
 - Not “tried and true”
 - O&M unknowns
 - Staff training requirements
 - The Alaska Factor

Realistically “novel”

- Proven technology from other fields
- A combinations of technologies considering
 - current water/wastewater quality goals
 - future/variable water/wastewater quality goals
 - O&M feasibility
- Delivery/Collection Paradigm
- Optimization of Operation

Implemented Examples

Drinking Water

- Ultra- and Nano-filtration Tubular Membranes
 - Origins in food processing industry

Wastewater

- Subsurface Injection
 - Common place for oil & gas industry

Broad Ideas

- Other industries technologies
- Multiple levels of quality
- Decentralized treatment
 - Point-of-Use / On-site
 - Clustering
- Reduced Design Life
- Operating Techniques/Monitoring/
Regionalization

How?

Applied Research

-  **May not directly result in construction**

Pilot/Demonstration

-  **Real systems in real situations**

Thank you

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