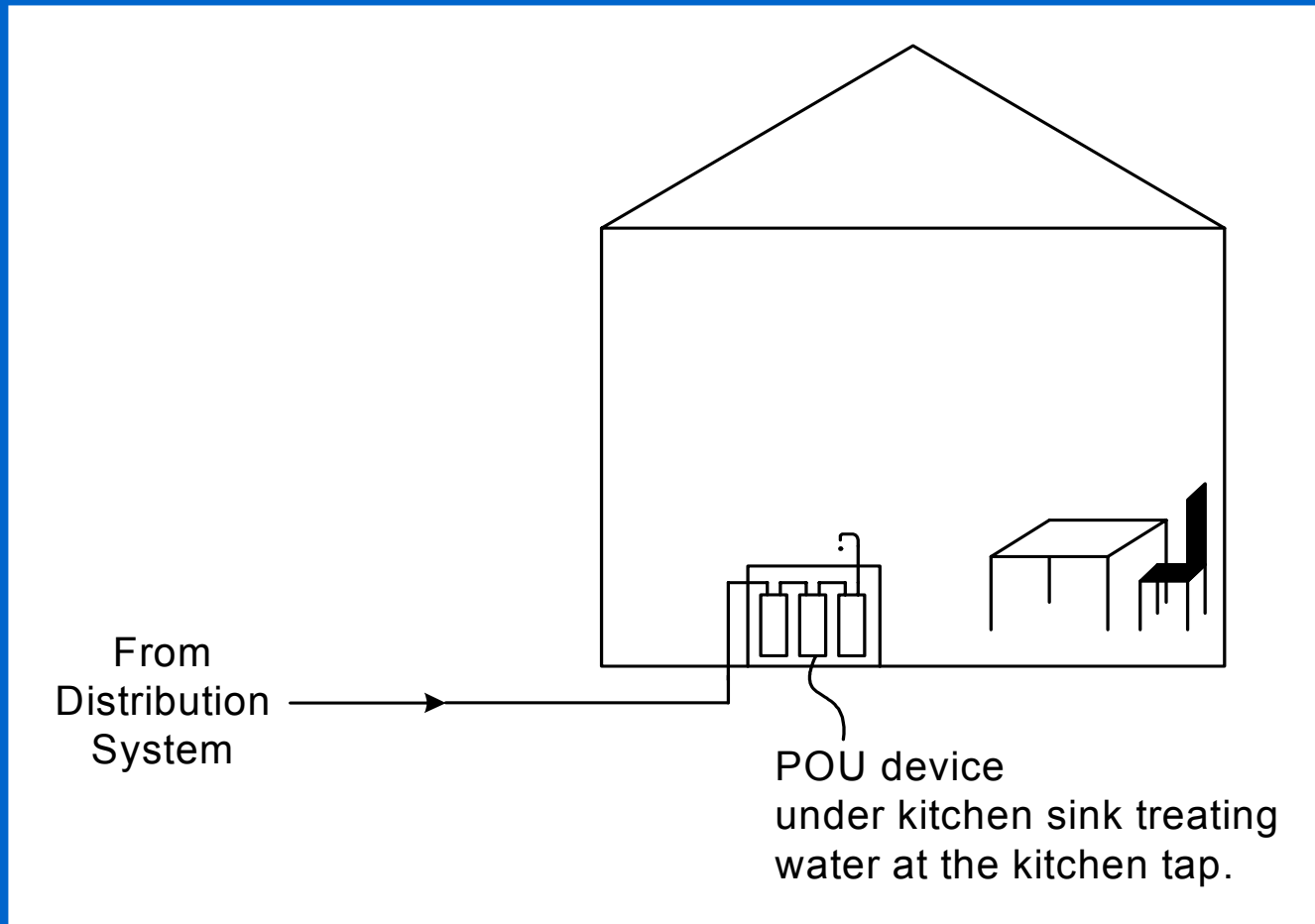


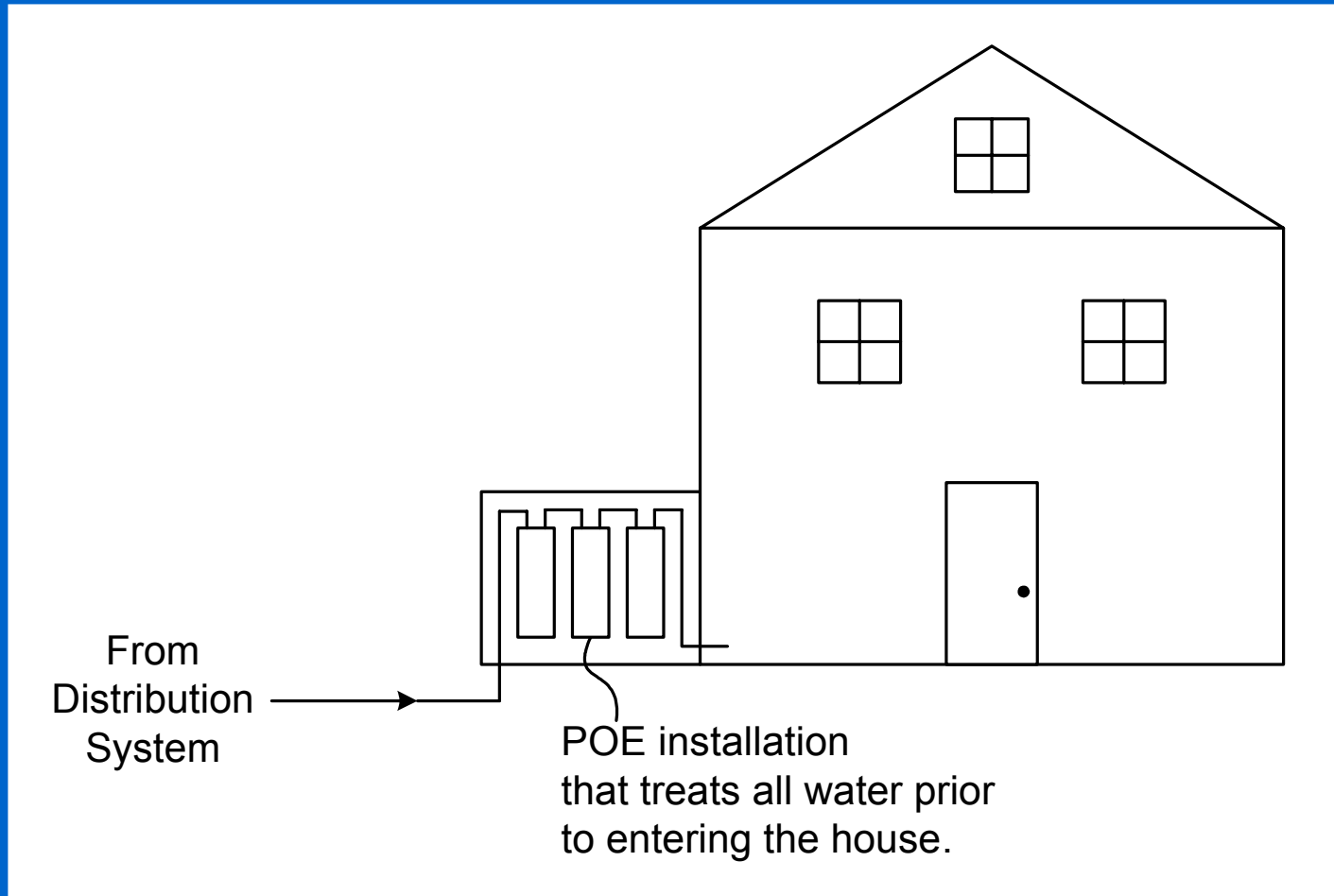
Point-of-Use and Point-of-Entry

Janet Cherry
The Cadmus Group, Inc.

Point-of-Use (POU) Treatment



Point-of-Entry (POE) Treatment



SDWA Requirements

- POU devices:
 - EPA cannot list POU as an affordable technology for compliance with an MCL or treatment technique for a microbial contaminant or indicator of a microbial contaminant.
- POU and POE devices:
 - Must be controlled and maintained by the PWS.
 - Must have mechanical warnings to automatically notify customers of operational problems.
 - Where ANSI standards have been issued, only units meeting these standards may be used in a compliance strategy.

ANSI/NSF Standards

- Standard 44: Cation Exchange Water Softeners
- Standard 53: Drinking Water Treatment Units- Health Effects
- Standard 55: UV Water Treatment Systems
- Standard 58: RO Drinking Water Treatment Systems

40 CFR 141.100

- Language specific to Point-of-Entry devices
- Similar to language in 40 CFR 142.62

40 CFR 142.62(h)

- Requirements for PWSs that use POU or POE devices as a condition for obtaining a variance or an exemption from NPDWRs:
 1. The PWS is responsible for operating and maintaining the devices.
 2. PWS must obtain the approval of a monitoring plan prior to installation of devices.

40 CFR 142.62(h)

3. The PWS must apply effective technology under a State-approved plan. The microbiological safety of the water must be maintained at all times.
4. The State must require adequate certification of performance or a rigorous engineering design review of the POU and/or POE devices.
5. The design and application of the POU and/or POE devices must consider heterophic bacteria concentrations in water treated with activated carbon.

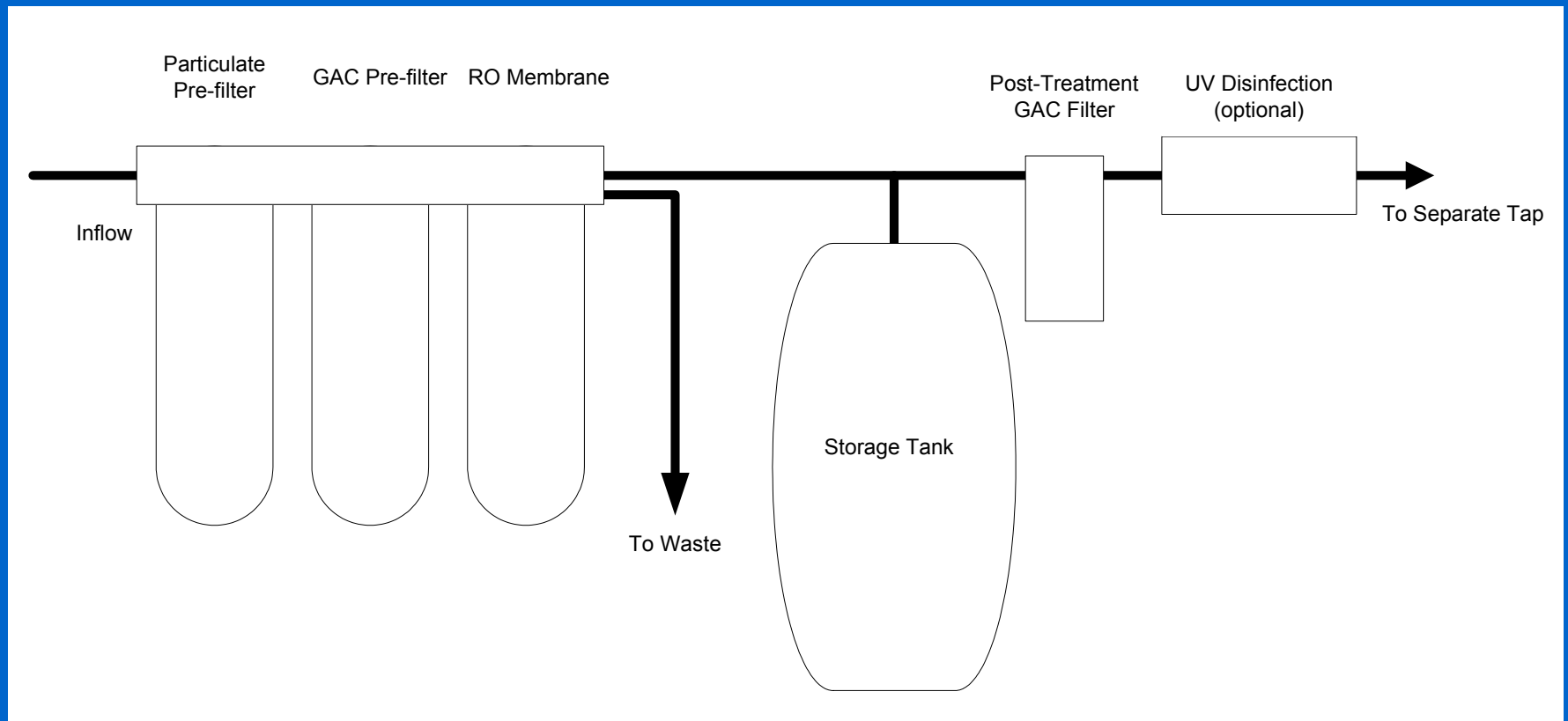
40 CFR 142.62(h)

6. The State must be assured that all consumers will be protected.
7. In requiring the use of a POE device as a condition for granting an exemption from the treatment requirements for lead and copper, the State must be assured the device will not cause increased corrosion of lead and copper bearing materials located between the device and the tap that could increase contaminant levels at the tap.

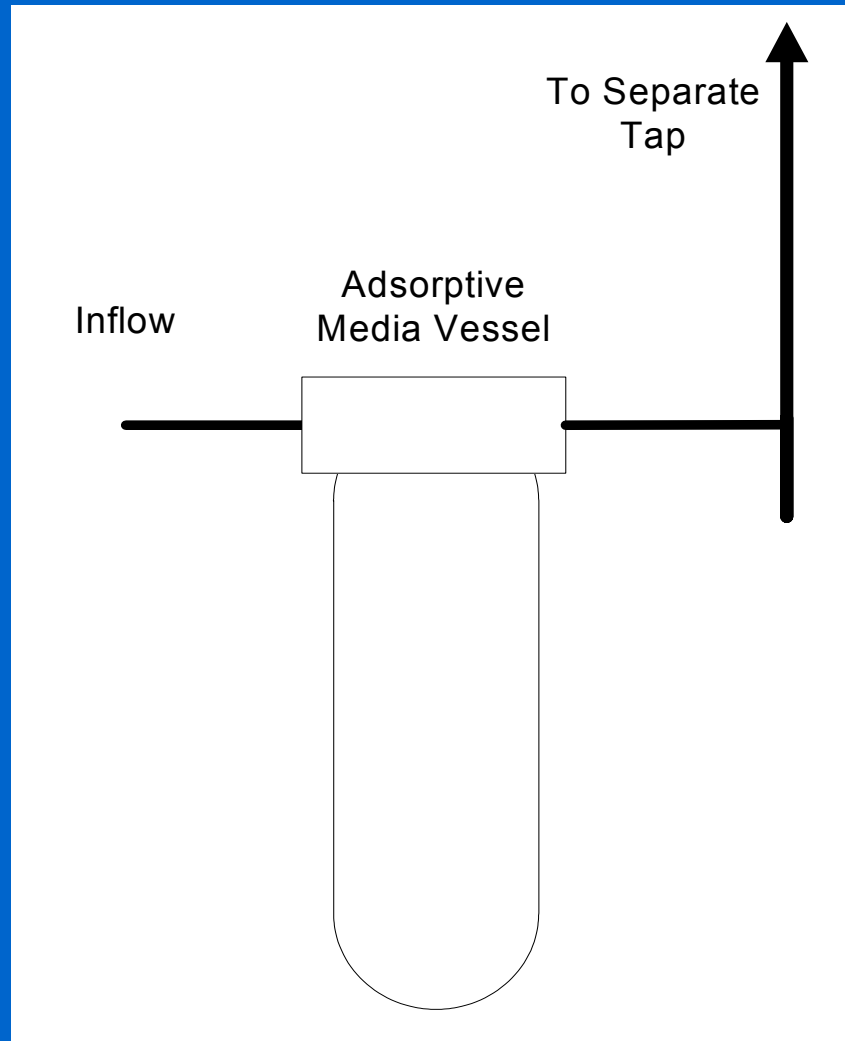
Arsenic Rule

- SSCTs for arsenic removal (for systems serving 10,000 or fewer):
 - POU Reverse Osmosis
 - POU Activated Alumina

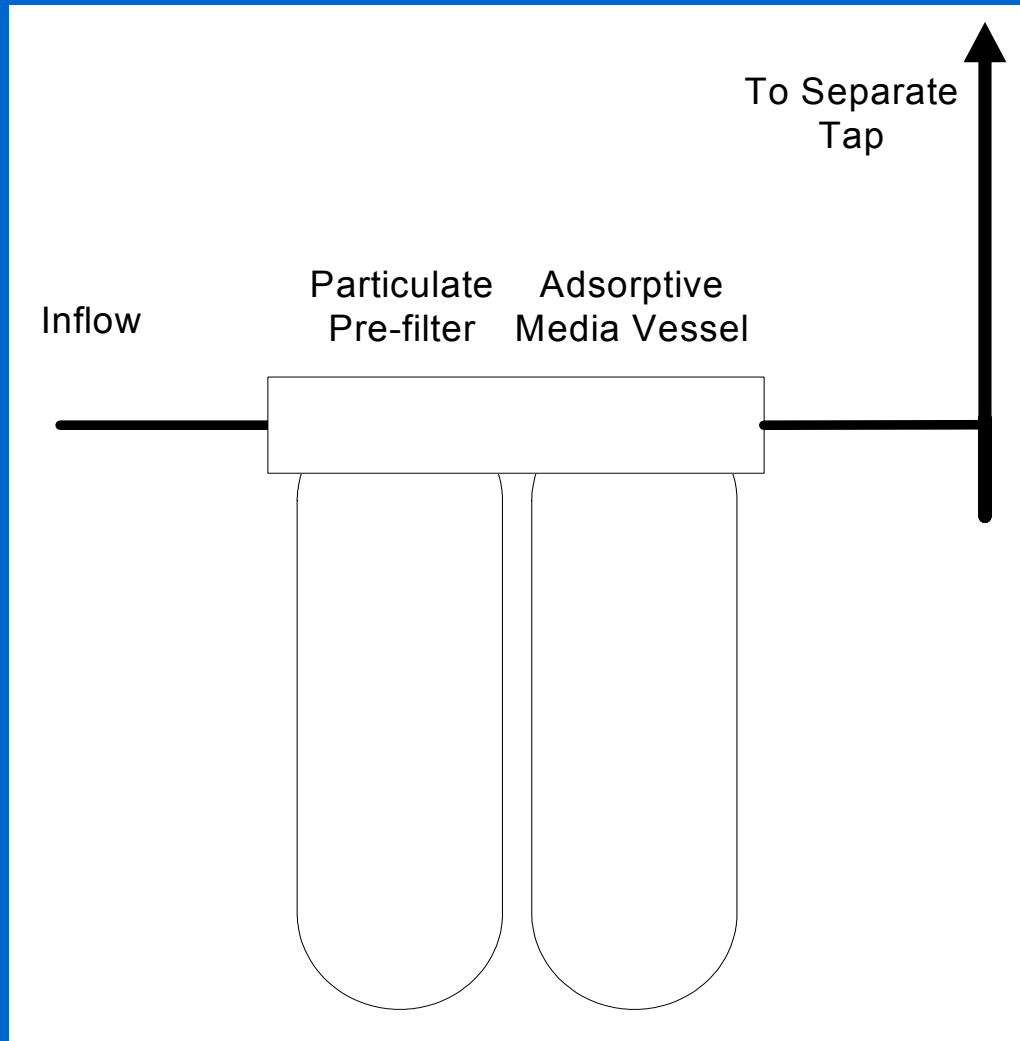
POU Reverse Osmosis



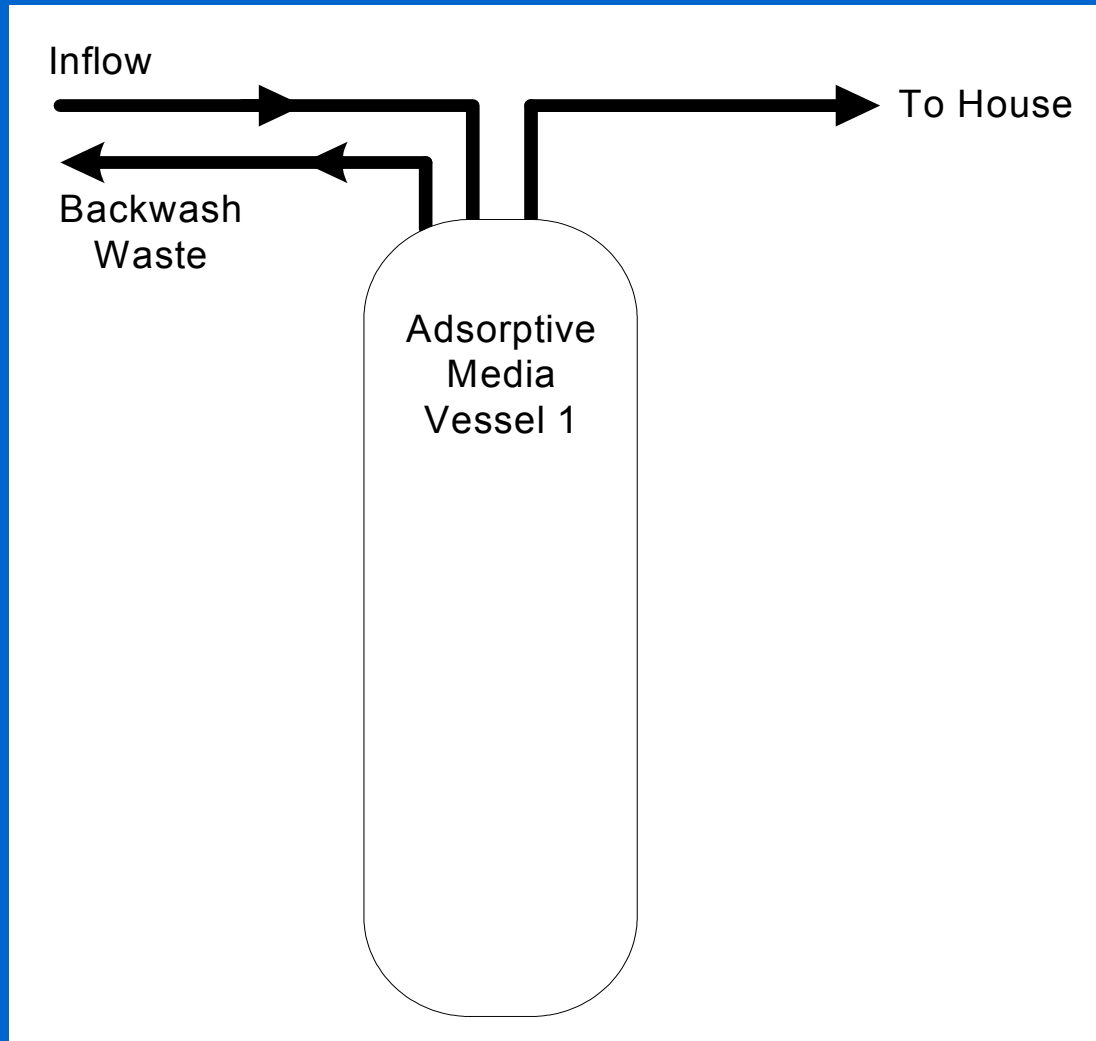
POU Adsorptive Media (NSF Certified)



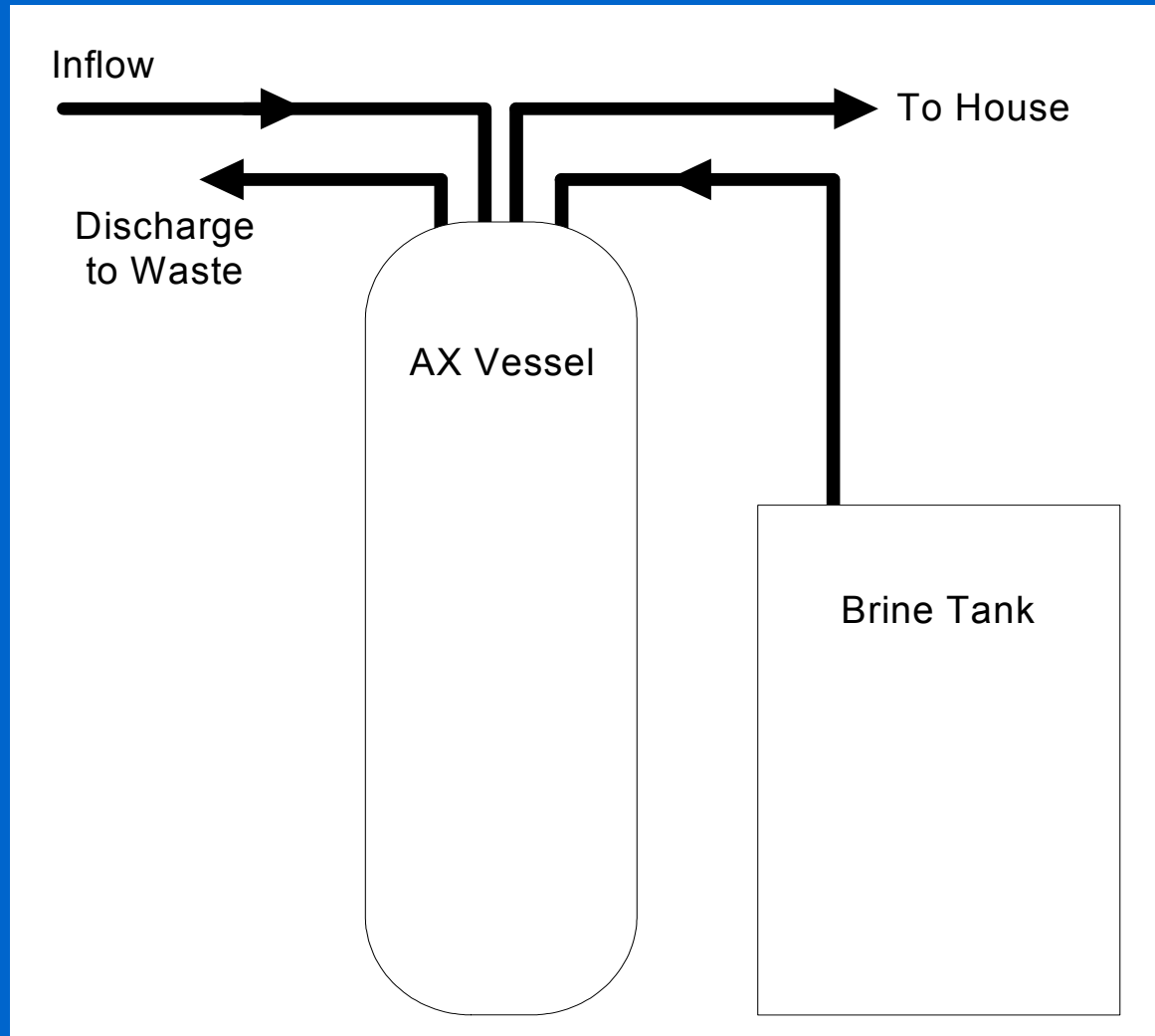
POU Adsorptive Media (Non-NSF Certified)



POE Adsorptive Media – Auto Backwash



POE Anion Exchange – Auto Regeneration



POU Case Study- Fallon Air Force Base

- POU RO devices installed to address arsenic
- Device had GAC pre-filter, sediment pre-filter, RO, and post GAC filters with storage tank



POU Case Study- Fallon Air Force Base

- No pilot test conducted- POU RO considered a temporary solution to arsenic MCL until system connected to City of Fallon water
- All units installed and maintained under contract by the vendor
- Installation averaged one hour

POU Case Study- Fallon Air Force Base

- Maintenance and disinfection performed every 9 months
 - Both GAC and sediment pre-filters replaced every 9 months
 - RO filters replaced every 27 months
- Units removed 90% of arsenic

POE Case Study- Lumni Island

- POE AX devices installed to address arsenic
- System required to perform extensive pilot testing (2 studies conducted over 4 years)



POE Case Study- Lumni Island

- System must have certified operator and operator checks POE devices every 3 months
 - Takes samples to verify treatment
- POE devices removing arsenic and meeting the MCL
- Device automatically regenerates and waste sent to the individual septic tank and drainfield
- For compliance purposes, each home is considered individually by the State

General Information

- EPA is currently finalizing a guidance manual to assist states and systems with implementing a POU or POE treatment strategy
- EPA is also working on a cost document that may assist states and systems with identifying potential costs associated with a POU or POE treatment strategy