

Small System Compliance through RO POU and Centralized

Shannon Murphy

New Mexico Environmental Health
Conference

October 19, 2004



POU Solutions

- 💧 Point of Use (POU) Products are already being used for various water compliance applications nationwide
- 💧 Current compliance applications include:
 - Radium
 - Perchlorate
 - Lead
 - Nitrate/Nitrite
 - Arsenic
- 💧 Arsenic, due to larger scale impact, has demanded the review and implementation of large scale management tools



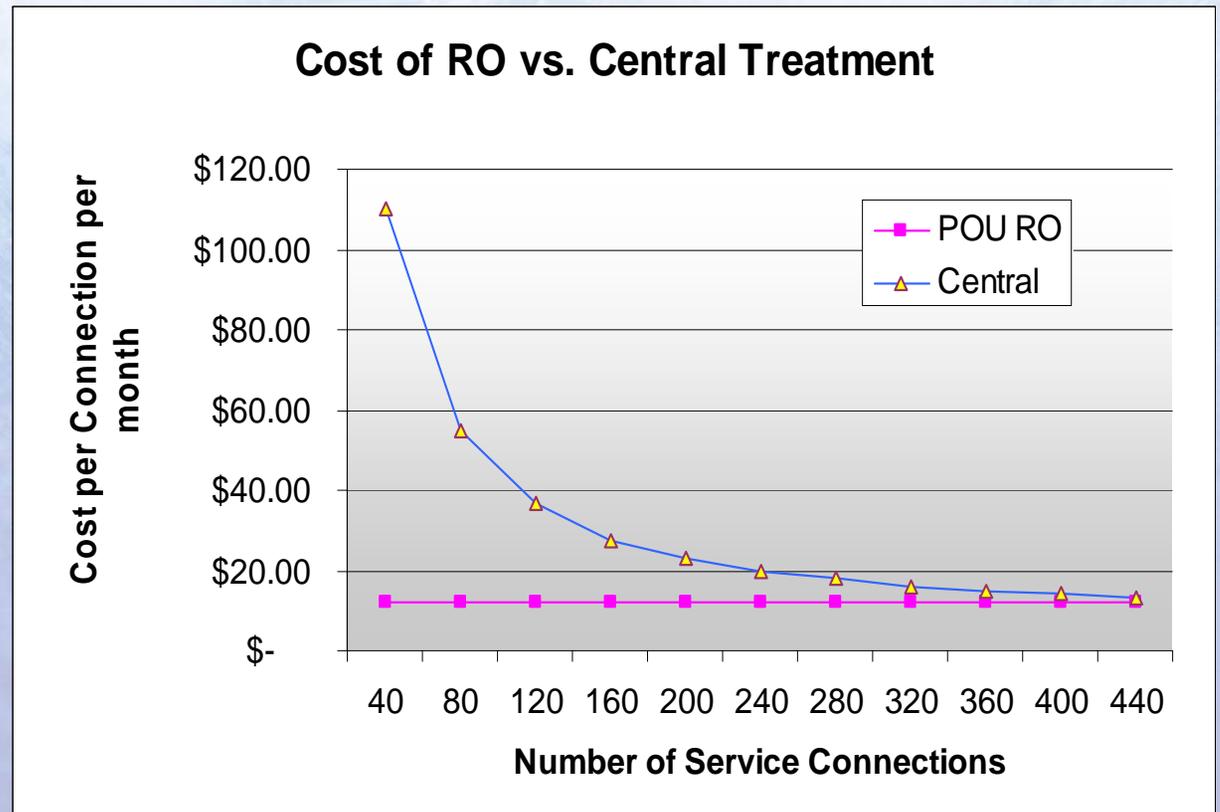
POU Advantages

- 💧 Consumers can see treatment
- 💧 Consumers familiar with the technology
- 💧 Can provide compliance to multiple contaminant needs (RO - arsenic, nitrates/nitrites, radium etc.)
- 💧 Often solves other secondary water quality issues (aesthetic water quality)
- 💧 May also provide compliance for new regulations that are coming down the pipeline, with out any additional cost (e.g. perchlorate).
- 💧 Excessive capitol and annual cost burden for central treatment for these small systems
- 💧 POU provides very cost efficient compliance solution

POU Cost Overview

Includes:

- \$220 RO
- \$80 Install
- \$35 Annual Filter Replacement
- \$50 Annual Service Check
- \$48 RO membrane (approx. every 2 yrs)



2. No → Please provide a comment why not

It seems like a waste to filter all the water, instead of the drinking water.

We spend that amount on bottled water a month.

Save on bottled water cost & use in the long run. Readily available water

Q14 Do you think the BCC should have a program to offer in-house water filtration systems such as the one you have had installed in your house? (Please circle yes or no and provide a comment).

1. Yes → Please provide a comment why

COST EFFECTIVE, NOT FILTERING WATER THAT IS USED FOR BATHING, GARDENS, CAR WASH ETC.

POU Program

- 💧 SDWA Requires ANSI/NSF Certified POU Systems
- 💧 Systems must have PID
- 💧 Reverse Osmosis
 - Only device that directly monitors the quality of the water
 - Multiple contaminants with one product
 - Zero Waste RO patented 100% efficient POU RO
 - 35 ppb As reduced to non detect
 - 800 – 900 ppb As reduced to 5 – 10 ppb (private wells)

Installation

- 💧 Water system legally own, operate and maintain POU devices
- 💧 Devices may be installed by one or more of the following trained professionals:
 - System Operator
 - Water system Employee
 - Water corporation work group
 - Local water dealer
 - Other trained professional deemed appropriate by the water system and agreed upon by state agency
- 💧 Average installation takes 15 – 20 minutes, but plan to talk with homeowner about program and product.

O & M

Require maintenance report log

- One per dwelling
- Number of devices in dwelling
- Location of these devices
- Date of maintenance check
- What maintenance performed

Maintenance log

- Maintain records of receipts for period of time (X number of years)
- Can be managed by designated PWS group (like bonded water dealer) with periodic reports to System Management and Operator



Water Testing

- 💧 Same time schedule as current regulation
- 💧 Annual Community subset sampling:
 - Use of As Test Kits (ETV Verified)
 - Create system grid for sampling matrix
 - Minimum number of annual samples based upon system size
- 💧 As with O&M, water test log and record keeping can be conducted by system operator, or by designated professional that reports to operator

Reverse Osmosis

Field Test Results – M Series

	Feed Water (ppb)	Permeate (ppb)	Concentrate (ppb)
Arsenite (III)	3.7	1.2	7.1
Arsenate (V)	11	N/D	24
Fluoride	0.8	0.12	1.5
Vanadium	49	N/D	94

Reverse Osmosis

- Established and proven technology
- Easy operation – minimal additional operator requirements
- Minimal on sight chemicals needed, if any.
- Low initial and ongoing O&M Costs
- Reduction of multiple compounds with minimal competing ions or system fouling
- Water blending
- No “dumping” of other water contaminants

Reverse Osmosis

- 💧 Large pH range - little annual fluctuation effect
- 💧 Pre and post treatment options able to accommodate wide range of water and piping needs
 - Calcite addition post treatment
- 💧 Does not create any DBP's

Berino, NM

- 💧 13.8 ppb Arsenic
- 💧 7.67 pH
- 💧 840 mg/L TDS
- 💧 2 ft. X 10 ft
- 💧 230V, 115V
- 💧 evaporation pond
- 💧 Single Operator

Desert Sands, NM

- 💧 29 ppb Arsenic
- 💧 7.60 pH
- 💧 0.6 mg/L Fluoride
- 💧 37.8 mg/L Silica
- 💧 3 ft X 12 ft
- 💧 lagoon on sight
- 💧 Single Operator

Conclusions

- 💧 Considered for systems 300 hook ups and below
- 💧 Multiple contaminant applications
- 💧 Future regulation compliance – no additional cost
- 💧 Represents significant cost savings for small communities
- 💧 Listed communities may be large for POU program, however will assist smaller communities with regulation.
- 💧 Watts Premier has worked with many small systems and state agencies to develop a successful POU program for small communities.

Questions?

Shannon Murphy

murphysp@wattsind.com

623-505-1514

