

OurwaterQuality

Fact, fiction about reverse osmosis

“Reverse osmosis (RO) is wasteful.”

No, in the sense that a non-renewable fossil fuel is burned and not only exhausts the fuel but releases carbon dioxide into the atmosphere. Yes in the sense that the RO process rejects water to purify water. This water is not lost but is returned to the hydrologic cycle. Efficient, under-counter ROs with permeate pumps (non-electrical devices that operate on water pressure) reject about four gallons of water per gallon.

This same argument about water usage applies to dishwashers and washing machines. New technology in RO membranes will further reduce this rejection rate. Larger, commercial ROs have much lower ratios (below 1:1), but then there is the plastic bottle issue. RO is second only to energy-intensive distillation in purifying water.

“RO water is aggressive and creates pinhole leaks in copper pipes.” Yes and no. RO water is aggressive, but it is not just *because* it passes through the RO. In removing most contaminants in the water, the pH is lowered below neutral. The pH of water is a measure of dissolved hydrogen ions and is an indicator of

the acidity or basicity (alkalinity) of a solution. Low-pH water is in fact aggressive, but the pH is easily and commonly raised by installing a post-RO calcite filter.

Some manufacturers claim in their literature that certain systems produce “bottled water quality” water, but these systems are not certified for contaminant reduction (try looking them up on the NSF International website) and their claims of customer satisfaction are largely based on the customer satisfaction derived because granulated activated carbon (GAC) serves to remove chlorine from municipal water supplies. This same product becomes a breeding ground for bacteria in non-chlorinated well water applications.

The term “RO” is often used synonymously with “bottled water” to connote the high purity of (most) bottled water. Multi-stage RO systems have carbon filters both to remove chlorine and protect the RO membrane. Often unsubstantiated claims are made about the contaminant-removing capabilities of carbon. Recent testing indicates that the medium KDF (a copper zinc alloy

that chemically reduces free chlorine to chloride ions) is superior to GAC for use in showerheads and water pitchers. The best methods for removing chlorine are various forms of whole-house treatment, but don't be confused with chlorine removal and water contaminant reduction.

In March, 2008, the *Associated Press* reported about pharmaceuticals in drinking water in major metropolitan areas. (Albuquerque water tested negative and Santa Fe water was not tested). Although the article is recent, pharmaceuticals in water have been recognized for decades to originate from industrial, agricultural, medical and common household practices.

Currently there is no national coordinated effort requiring either the monitoring or treatment of pharmaceutical contamination of drinking water and wastewater. Various forms of oxidation (specifically ozonation and UV and ozonation and hydrogen peroxide) have proved to be more effective than chlorination against pharmaceuticals. RO is widely recognized for its ability to remove both



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pharmaceuticals and radionuclides from water. NSF International does not certify equipment for uranium removal. We have consistently confirmed (naturally-occurring) uranium removal by RO by pre-treatment and post-treatment lab testing. Reverse osmosis does have its limitations, but it is an ever-evolving technology that still remains the best and most practical method of purifying drinking water.

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Recent Home & Land Sales

Sales data for the period
March 19-April 18 from
Santa Fe Association of
Realtors MLS reports. Not
all sales are reported.

Homes	\$179,000	\$250,000	\$290,000	\$359,900
\$153,000	\$204,699	\$250,000	\$295,000	\$380,000
\$160,000	\$218,862	\$255,000	\$315,000	\$385,000
\$165,000	\$222,500	\$256,045	\$329,000	\$396,000
\$169,000	\$244,575	\$285,000	\$337,000	Land
\$175,000	\$246,000	\$289,000	\$350,000	(none)

Homes	\$427,500
\$130,000	\$465,000
\$130,000	\$475,140
\$210,000	\$770,000
\$220,000	Land
\$296,000	\$150,000
\$299,000	
\$350,000	

Homes	\$728,000
\$1,000,000	
Land	
\$185,000	
\$288,500	

Homes	\$320,000
\$139,800	\$494,000
\$149,900	Land
\$165,000	\$199,000
\$190,050	\$475,000
\$281,500	

Homes	\$1,660,000	\$205,000
\$350,000	\$1,795,000	\$229,000
\$837,000	Land	\$260,000
\$901,589	\$145,000	
\$1,130,000	\$167,500	

Homes	\$493,000	\$952,000
\$415,000	\$495,000	Land
\$415,000	\$590,000	\$450,000
\$448,000	\$710,000	
\$490,000	\$835,000	

Homes	\$495,000	\$950,000
\$152,000	\$560,000	\$1,150,000
\$201,000	\$610,000	\$1,420,000
\$325,000	\$620,000	\$2,310,300
\$345,000	\$638,000	Land
\$380,000	\$670,000	(none)
\$460,000	\$720,000	
\$490,000	\$747,000	

Homes	Land
\$475,000	\$180,000
\$572,000	\$206,000
\$750,000	
\$1,775,000	

Homes	\$320,000	\$540,000
\$250,000	\$320,000	Land
\$290,000	\$427,000	(none)
\$307,000	\$444,500	
\$308,000	\$465,000	