

Digested Organic's **Two-Step Reverse Osmosis™ (TSRO)** process converts ultrafiltered dairy manure into clean water suitable for discharge/reuse and a concentrated fertilizer for on-farm use or sales. We provide this cutting-edge technology as a skid-mounted or containerized package that is easy to install, highly automated, and requires little operator attention. It is available for purchase or can be setup on a fee-per-gallon service plan so there is no capital outlay and your facility immediately recognizes cost savings. Typically, we can recover greater than 70% of the filtered manure volume as clean water.



Ultrafiltered dairy manure, stack concentrate, and TSRO permeate (clean water)

Results from recent testing at Majestic Crossing Dairy in Wisconsin are shown in the table below. Our TSRO process generated water that met reuse standards for animal drinking water at a rate of >65% of the incoming ultrafiltered manure. Additional polishing steps, such as aeration and scrubbing for ammonia, are employed when required for discharge to a waterway. Notably, the TSRO removed phosphorus to below detectable levels.

Parameter	Feed	Permeate	Removal
Total solids (mg/L)	18,500	505	97%
Total Kjeldahl nitrogen (TKN) (mg/L)	2,180	50.0	98%
Ammoniacal nitrogen (mg/L)	2,020	48	98%
Organic nitrogen (mg/L)	160	2.5	98%
Phosphorus (mg/L)	53	n.d.	>99%
Potassium (mg/L)	2,230	17	99%
Sulfur (mg/L)	1,110	6	99%
Calcium (mg/L)	689	n.d.	>99%
Magnesium (mg/L)	373	n.d.	>99%
Sodium (mg/L)	1,000	164	84%
Iron (mg/L)	0.36	n.d.	>99%
Manganese (mg/L)	0.903	n.d.	>99%
Zinc (mg/L)	0.04	n.d.	>99%
Copper (mg/L)	n.d.	n.d.	>99%
Conductivity (mS/cm)	23.1	1.28	94%
pH S.U.	6.78	6.28	N/A



TSRO System

Please inquire today for a customized proposal for your facility and to schedule pilot testing at our facility in Farmington Hills, Michigan.