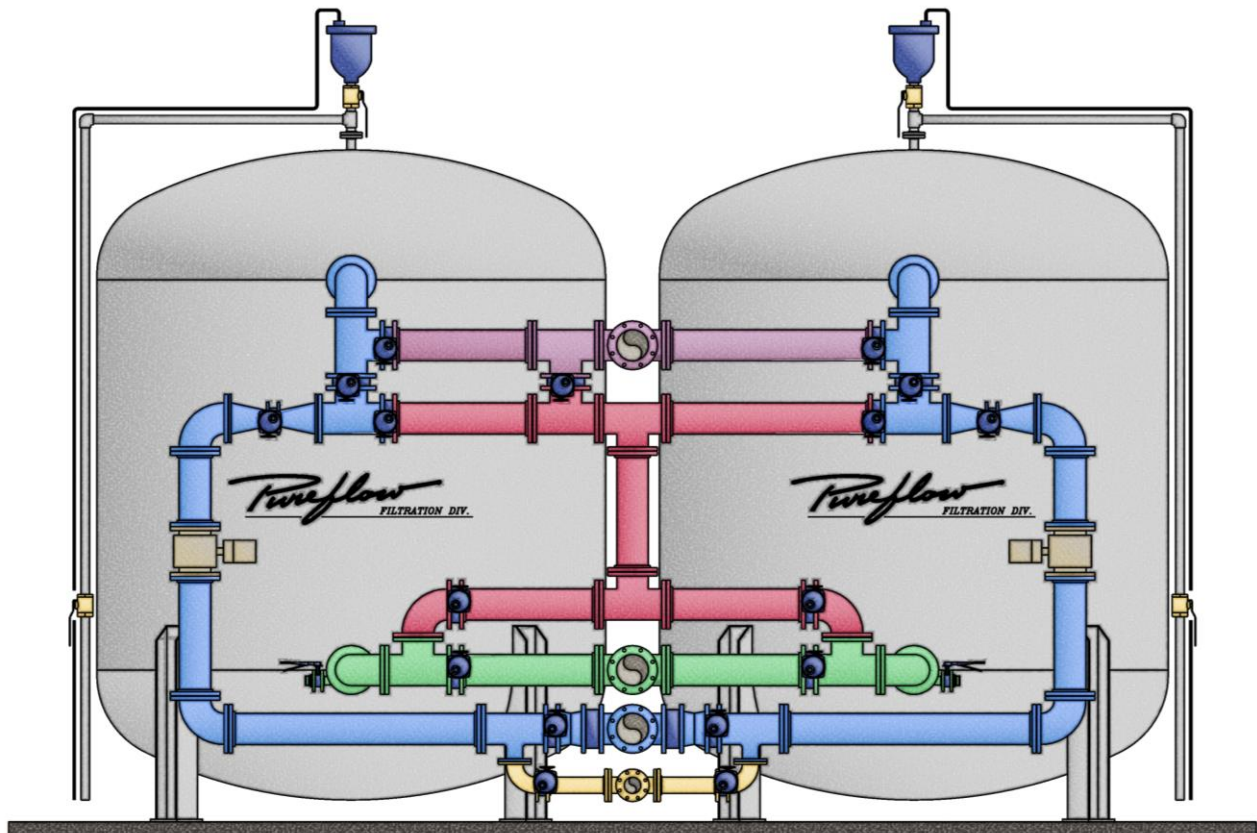




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# NITRATE REMOVAL SYSTEMS

THE PUREFLOW<sup>®</sup> SYSTEM FOR THE REMOVAL OF NITRATE / NITRITE from potable water supplies is an improved design for the water treatment industry. Pureflow offers various ion exchange resins, based on raw water quality, to provide a simple, safe and compact process; with automated controls, that require minimum attendance by operations personnel.



- o USER - FRIENDLY SYSTEMS
- o AUTOMATED CONTROLS
- o AUTOMATED REGENERATION
- o MINIMAL MAINTENANCE REQUIREMENTS
- o COMPETITIVE OPERATIONAL COSTS
- o CHEMICAL TREATMENT EQUIPMENT
- o DESIGN / BUILD SYSTEMS
- o TOTAL SYSTEMS RESPONSIBILITY
- o FLOW RANGES FROM 20 GPM TO 10,000 GPM
- o NO - HASSLE SERVICE

# THE PROCESS AND HOW IT WORKS

Raw water quality and site waste disposal factors determine the type of resin that will be used to remove nitrate from potable water supplies. Nitrates ( $\text{NO}_3^{-1}$ ) and nitrites ( $\text{NO}_2^{-2}$ ) are the most common nitrogen contaminants found in drinking water. Ion exchange of chloride for nitrates is, currently, the simplest and most economical method for removing nitrate from ground water. Since anion exchange resins are, generally, more selective for sulfate over nitrates, the capacity of a resin for nitrate removal will be limited by the concentration of sulfates. If the ratio of sulfate to nitrate is low, a high capacity resin is recommended. If the ratio of sulfate to nitrate is high, a nitrate selective resin should be considered.

Nitrate selective resins have increased selectivity for nitrate and prefer nitrates over sulfates and other ions, even at the very low TDS common to potable water supplies. This increased preference prevents nitrate dumping and retains a greater degree of its operating capacity in the presence of high levels of sulfates.

## TYPICAL VESSEL SIZES

*gpm	MODEL NUMBER	SURFACE AREA SQ. FT.	FILTER DIAMETER IN INCHES	FILTER STRAIGHT SIDE SHELL	FILTER SHIPPING WEIGHT LBS.	PIPE OUTLETS IN INCHES
10	N-2	2	20	60	600	1 1/2
15	N-3	3	24	60	780	1 1/2
30	N-5	5	30	60	1000	2
40	N-7	7	36	60	1100	2
50	N-10	9.5	42	60	1400	2
70	N-13	12.5	48	60	1600	2
80	N-16	15.5	54	60	1800	2
110	N-20	20	60	60	2200	3
125	N-24	23.5	66	60	2300	3
150	N-28	28	72	60	2700	3
200	N-33	33	78	66	3400	4
250	N-38	38	84	66	3800	4
280	N-44	44	90	66	4200	4
300	N-50	50	96	66	6300	4
350	N-56	56	102	66	6900	4
400	N-63	63	108	66	7800	6
500	N-70	70	114	72	8700	6
600	N-78	78	120	72	9500	6
700	N-86	86	126	72	10,000	6
800	N-92	92	132	78	11000	8
900	N-100	100	138	78	13000	8
1200	N-113	113	144	96	14000	8

\*Flows and side shell depth may vary with raw water quality.

Contact time (estimated ) 3 - 4 minutes.

LOCAL REPRESENTATIVE:

Pureflow selects NSF / ANSI 61 approved ion exchange resins from major manufacturers of ion exchange products. We provide ASME code pressure vessels with manways and filter internals. We also provide automatic controls and automatic regeneration of the spent resin using sodium chloride (NaCl) solution. In addition, we include brine tanks, instrumentation, flow / pressure control valves and process analyzers as required.

## STANDARD FEATURES AND EQUIPMENT:

- o 75 psi ASME code pressure vessels
- o Face piping
- o Electrically operated butterfly valves
- o Flow control valves
- o Process flow meters
- o pH Analyzer
- o NSF approved interior coating
- o NSF approved resin
- o Brine regeneration equipment (pump, valves, instruments)
- o Automatic control panel
- o Manways, and hatchway, when required
- o Drain valves (up to 4")
- o Air relief valves
- o Custom written O & M manuals
- o Start-up instruction

## OPTIONS AND SPECIAL DESIGNS:

- o High pressure ASME code vessels
- o Design / Build systems
- o Service contracts
- o Pilot ion exchange systems
- o Brine storage tank
- o Special designs available upon request