AlpheiusPure Water Automatic Desalination Solution

#### Australia’s bore water is becoming increasingly salty

Some is now saltier than the ocean. Many homeowners, farmers, piggeries, feedlots, chicken farms, mines, golf courses, towns and cities, factories, hospitals and public utilities now have all the fresh water they want by utilising reverse osmosis with an AlpheiusPure water desalination plant.

#### Many lakes, rivers and creeks in Australia are salty or brackish

Many owners of homes, gardens, farms, businesses, factories, private and public organisations are worry-free because an AlpheiusPure water desalination plant gives them all the fresh water they need.

#### Water allocations for irrigators have been reduced

And water licence fees have increased. Through using reverse osmosis with an AlpheiusPure water desalination plant you can convert unusable salt water, seawater, bore water, grey water or polluted water into as much clean, pure irrigation water as you need; from 1000 litres a day to 4 million litres a day.

#### Mains water quality is worsening

The rapid deterioration in mains water quality is causing scale in many boilers and industrial plants. AlpheiusPure water desalination plants use reverse osmosis to eliminate this problem.

#### Fresh water is expensive to buy

Save money with an AlpheiusPure water desalination plant and have all the water you want, on tap, every day of the year.

The answer to your water problems lies in the unusable water that is right at your feet …

….using an AlpheiusPure water supply.

# Desalination of Water

Rapid advances in technology mean that you now can easily and cheaply extract pure, fresh water from seawater and salty bore water.

#### How does it work?

The AlpheiusPure Water Automatic Desalination Solution uses reverse osmosis to desalinate cheaply and easily almost any salty water, seawater, bore water, grey water and polluted water into abundant fresh water.

Plants use osmosis to draw fresh water through their roots and move it up to the leaves. The Reverse Osmosis (RO) process uses highly advanced membrane and pump technology to extract pure water from seawater, salty bore water and recycled water. Scientists are still not sure how a membrane transports only the water molecules and not other substances. If you look at a membrane under a powerful microscope, you cannot see pores; the water molecules or atoms are forced under pressure to cross the membrane barrier. It just works; and that means all the fresh water you want.

# What about the waste water?

There can be 60% waste water, or more, depending on the salinity of your source water. If you have a sewered service, apply to the relevant authority for a permit to discharge the waste water to the sewer, as the waste from a low salinity unit is also fairly low in salinity. Ensure that any concentrated waste is not discharged to creeks, rivers or lakes if it would be harmful to the environment.

Over many millions of years, trees have extracted only pure water from underground and left the salts and the solids behind. Similarly, you could replace the waste from your desalinator back deep underground, well away from bores.

If you have a spare dam or some space you could use the waste for aquaculture. Some farmers grow barramundi, red-claw (of which the Americans can't buy enough), brine shrimp for fish food, seaweed, plus more.

One farmer with of a large desalination unit draws feed water from a bore and discharges the waste into a nearby lake. The waste has a lower salt content than the lake and all the waterbirds congregate around the water discharge pipe to swim in the purer water. The waste is less salty than seawater. Some users discharge the waste onto large, shallow, black-plastic-lined earth pans. When it is concentrated by the sun into brine, the salt crystallises and is collected and packaged as a gourmet salt product, which provides extra income.

# How Much Will It Cost To Use Our Unit?

#### Low-salinity water

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Litres/Day | 1K | 2K | 4K | 8K | 10K | 20K | 25K | 40K | 60K | 80K | 100K | 1M |
| Litres/Hr | 42 | 83 | 167 | 333 | 417 | 833 | 1042 | 1667 | 2500 | 3333 | 4167 | 41667 |
| Power kWh | 0.25 | 0.37 | 0.75 | 0.75 | 0.75 | 2.2 | 2.2 | 3 | 5.5 | 7 | 17 | 80 |
| Litres/kWh | 167 | 225 | 222 | 444 | 556 | 379 | 473 | 556 | 455 | 476 | 245 | 521 |
| Cost/1000 Litres $ | 0.74 | 0.55 | 0.56 | 0.28 | 0.22 | 0.33 | 0.26 | 0.22 | 0.27 | 0.26 | 0.51 | 0.24 |

#### Brackish water

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Litres/Day | 3K | 6K | 10K | 15K | 20K | 30K | 55K | 500K | 1M |
| Litres/Hr | 125 | 250 | 417 | 625 | 833 | 1250 | 2292 | 20833 | 41667 |
| Power kWh | 1.5 | 1.5 | 2.2 | 3 | 3 | 4 | 5.5 | 70 | 150 |
| Litres/kWh | 83 | 167 | 189 | 208 | 278 | 313 | 417 | 298 | 278 |
| Cost/1000 Litres $ | 1.50 | 0.75 | 0.66 | 0.60 | 0.45 | 0.40 | 0.30 | 0.42 | 0.45 |

# Why Choose AlpheiusPure?

#### Quality

AlpheiusPure is an Australian company with over 30 years experience in developing Water Desalination solutions.

#### Standards

AlpheiusPure’s automatic desalination plants use reverse osmosis to conform to world health organisation standards of drinking water.

#### Reliability

The AlpheiusPure Automatic Desalination Solution is designed and tested to last for many years.

#### Complete Solution

We supply absolutely everything for you.  We can install the system for you or you can choose a self-install option.

#### Economical

AlpheiusPure can deliver fresh water for as little as six cents per 1000 litres in running costs.

#### Advice and Support

Receive outstanding backup and technical support.

#### Service and Maintenance

AlpheiusPure can provide you with a full maintenance and service agreement.