About us: Company specialized in Water Engineering

- Development of **Innovative Water Treatment Technologies** in our own Research and Development Centre.
- Broad portfolio of technologies and possibility to create **Tailor-Made Solutions**
- Creation of **Pilot Plants** to demonstrate in a practical way that the solutions work.
- More than 15 years in the sector and **knowledge of the complete water cycle**.
- Agreements with **Saint Gobain** for sharing experiences, technologies and projects.
Company Background

2005
The company is created. It is focused on traditional engineering.

2008
First steps in international projects

2013-2014
The company is strategically positioned with an R&D orientation

2014-2019
- SME Instrument
- CDTI Project
- FITWATER
- Sensodes
- Anaergy
- Oxi-Twin

2021
New projects coming soon

R&D income
A key requirement for a technology to succeed: **↓ OPEX, ↓ CAPEX, SUSTAINABLE**

<table>
<thead>
<tr>
<th>Technology</th>
<th>Process Description</th>
<th>Estimated Price (€ / m³)</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron Removal</td>
<td></td>
<td>0.03</td>
<td>Adsorption, Particulation</td>
</tr>
<tr>
<td>Mangenese Removal</td>
<td></td>
<td>0.04</td>
<td>Adsorption, Particulation</td>
</tr>
<tr>
<td>Ammonium Removal</td>
<td></td>
<td></td>
<td>Biological</td>
</tr>
<tr>
<td>Uranium Removal</td>
<td></td>
<td>0.02</td>
<td>Adsorption</td>
</tr>
<tr>
<td>Fluorides Removal</td>
<td></td>
<td>0.18</td>
<td>Coagulation/Filtration with FILTRALITE</td>
</tr>
<tr>
<td>Sulphates Removal</td>
<td></td>
<td></td>
<td>Biological</td>
</tr>
<tr>
<td>Phosphorus Recovery</td>
<td></td>
<td></td>
<td>Adsorption</td>
</tr>
<tr>
<td>Heavy Metal Removal:</td>
<td></td>
<td></td>
<td>Adsorption, Particulation</td>
</tr>
<tr>
<td>Arsenic</td>
<td></td>
<td>0.03</td>
<td>Biological</td>
</tr>
<tr>
<td>Cupper</td>
<td></td>
<td></td>
<td>Biological</td>
</tr>
<tr>
<td>Cadmium</td>
<td></td>
<td></td>
<td>Biological</td>
</tr>
<tr>
<td>Chrome</td>
<td></td>
<td></td>
<td>Biological</td>
</tr>
<tr>
<td>Zinc</td>
<td></td>
<td></td>
<td>Biological</td>
</tr>
<tr>
<td>Nickel</td>
<td></td>
<td></td>
<td>Biological</td>
</tr>
<tr>
<td>Biological denitrification</td>
<td></td>
<td>0.14</td>
<td>Biological</td>
</tr>
<tr>
<td>Water treatment for the agri-food industry</td>
<td></td>
<td></td>
<td>Biological</td>
</tr>
<tr>
<td>Advanced Oxidation</td>
<td></td>
<td></td>
<td>Advanced Oxidation</td>
</tr>
<tr>
<td>Biological Carbonates Removal</td>
<td></td>
<td>0.21</td>
<td>Biological</td>
</tr>
</tbody>
</table>

*Estimated prices (each case has to be studied individually)
Puremust-sn®: Leading cost-effective and sustainable technology for nitrate removal.
Nitrogen is a vital nutrient that helps plants and crops grow, but high concentrations generates impacts on the stability of aquatic ecosystems.

These toxic substances generates a risk to human health and it may also affect the survival, growth and reproductive capacity of some animals.

The EU is aware of the problem and is setting out increasingly stringent measures that countries must take to reduce water pollution.

There is a growing global need of reducing water stress and treating groundwater. Central and Southern European countries have more than 20% of wells with excess nitrates.

“Need for biological removal technologies. Unlike reverse osmosis, these solutions can completely remove the pollutant and do not transfer the problem to other systems or again to the water cycle.”

“Why was the technology created?”

“Need for biological removal technologies. Unlike reverse osmosis, these solutions can completely remove the pollutant and do not transfer the problem to other systems or again to the water cycle.”
How does it work?

1. Nutrient dosage
2. Header tank
3. Water pumps
4.2 Biological Reactor
4.3 UV disinfection unit
5. Filtration

WATER CONDITIONING ➔ BIOFILTRATION ➔ FILTRATION ➔ DISINFECTION

Control panel

clean water that meets standards
Why it works better?

INTEGRATED AND REMOTED CONTROLLED AUTOMATION SYSTEM

WORK IN CARBON DEFAULT (carbon below stoichiometry).

FILTRALITE our bacteria carrier

As a Result:

The system is capable of operating **without loss of performance in very cold water** temperatures, down to 4 degrees Celsius (39 degrees Fahrenheit).

Very **low OPEX** by working with carbon dosing below the stoichiometric level.

The plants are very compact because they require a **very low HRT which generates low CAPEX**.

CERAMIC MATERIAL
Expanded Clay from Norway

High Porosity & SSA [>1.500 m²/m³]

Bulk Density [800 – 900 kg/m³]

Grain Sizes [2-5 mm]

Great durability, (more than 20 years)
What solutions are available on the market?

- REVERSE OSMOSIS
- ION EXCHANGE RESINS

[Images of reverse osmosis and ion exchange resins systems]
What solutions are available on the market?

<table>
<thead>
<tr>
<th></th>
<th>INVESTMENT COST</th>
<th>MAINTENANCE COST</th>
<th>ENERGY CONSUMPTION</th>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVERSE OSMOSIS</td>
<td>HIGH</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>REMOVES OTHER POLLUTANTS.</td>
<td>REJECTIONS OF HIGHLY CONTAMINATED WATER.</td>
</tr>
<tr>
<td>FullTech</td>
<td>MEDIUM</td>
<td>LOW</td>
<td>LOW</td>
<td>NO REJECTION OF CONTAMINATED WATER. NO WATER CONSUMPTION</td>
<td>INNOVATIVE TECHNOLOGY IN THE MARKET</td>
</tr>
<tr>
<td>ION EXCHANGE RESINS</td>
<td>HIGH</td>
<td>HIGH</td>
<td>LOW</td>
<td>LOW WATER CONSUMPTION</td>
<td>VERY EXPENSIVE</td>
</tr>
</tbody>
</table>

Lower associated operating and investment costs.
How is it different/better than what is available?

<table>
<thead>
<tr>
<th></th>
<th>HRT (remove 100ppm nitrates) = 30 minutes</th>
<th>Aeration is not necessary after biofiltration.</th>
<th>We work with almost a stoichiometric dose of carbon (less than 1.2 ppm acetic acid per ppm nitrate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>↓space - ↓investment</td>
<td></td>
<td>No need to overdose carbon → No need to remove it after biofiltration.</td>
</tr>
<tr>
<td></td>
<td>100% automated plant with remote control</td>
<td>Completely clean, odorless and tasteless output water.</td>
<td>Puremust-sn® maintains 95% nitrate removal efficiency from 60ppm to 1600ppm nitrates over a water temperature range of 4º to 39º degrees.</td>
</tr>
</tbody>
</table>

PERFORMANCE TESTED IN REAL INSTALLATIONS OVER SEVERAL YEARS
**VS REVERSE OSMOSIS**

**PUREMUST-SN REMOVES NITRATES**

**REVERSE OSMOSIS SEPARATES NITRATES**

FOR THE INITIAL WATER SUPPLY IT IS TREATING, BUT DOES NOT REMOVE THEM AND CREATES ANOTHER, MORE POLLUTED DISCHARGE.

WITH PUREMUST-SN, NITRATES ARE TRANSFORMED INTO HARMLESS NITROGEN GAS. NO DISCHARGE OF POLLUTANTS.

WITH REVERSE OSMOSIS THE NITRATES ARE NOT TRANSFORMED AND CREATE A MORE POLLUTED DISCHARGE, WHICH WILL HAVE TO BE TREATED AGAIN.

IT DOES NOT ELIMINATE THE PROBLEM.

**CONTAMINATED WATER**

**SAME AMOUNT OF CLEAN WATER**

**CONTAMINATED WATER**

**LESS AMOUNT OF CLEAN WATER**

**PUREMUST-SN BIOFILTER**
These are reference prices for the removal of 100 ppm nitrates. 100 ppm is the most common amount of nitrates that customers want to remove.

Cases must be analyzed individually, but can be used as a good reference.

All these prices are for fully automated, remote-controlled, containerized plants.

We are able to supply plants at any flow rate.

<table>
<thead>
<tr>
<th>m3/h</th>
<th>gal/min</th>
<th>USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>44</td>
<td>175.604,00 USD</td>
</tr>
<tr>
<td>20</td>
<td>88</td>
<td>203.226,40 USD</td>
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<tr>
<td>30</td>
<td>132</td>
<td>244.363,60 USD</td>
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<tr>
<td>40</td>
<td>176</td>
<td>312.873,60 USD</td>
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<tr>
<td>50</td>
<td>220</td>
<td>364.607,10 USD</td>
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<tr>
<td>60</td>
<td>264</td>
<td>437.054,80 USD</td>
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<tr>
<td>70</td>
<td>308</td>
<td>476.346,00 USD</td>
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<tr>
<td>80</td>
<td>352</td>
<td>529.534,20 USD</td>
</tr>
<tr>
<td>100</td>
<td>440</td>
<td>585.499,20 USD</td>
</tr>
<tr>
<td>140</td>
<td>616</td>
<td>666.952,00 USD</td>
</tr>
</tbody>
</table>

*EXW price. Taxes not included
How can WRF help?

What parts of the technology need to be validated?
• Technology has been already tested in Europe. We would like to test the technology under real conditions in the US.

What types of partners do you need?
• Partners related to US Water Management Companies or US companies linked to water industry should be great.

Do you need Partners?
• After testing the technology in the US we would like to get an agreement with an American company to produce in the US the plants sold there.

Any desire for in-kind support?
• Support for finding the place to test the technology under real conditions in the US.
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“When Engineering comes from Ingenuity”