

Microelectronics  
Industry  
Ultrapure &  
Waste Water

Veolia Water Solutions & Technologies  
South East Asia

## SOITEC FAB 3, UPW & DI Reclaim Plants, Singapore



### ➔ THE CLIENT

Created in 1992, the French semiconductor company Soitec is the leading manufacturer of Silicon-On-Insulator wafers and other engineered substrates. Soitec serves twenty of the most important semiconductor players worldwide like AMD, Freescale Semiconductor, Mitsubishi Electric, OKI, IBM Microelectronics, Philips Semiconductors, Sony, Toshiba...etc.

In 2006 Soitec selected Singapore to build a new **300mm SOI fab**, to be known as Fab 3. The company has invested about **\$400 million** to build and equip a 4,000-square-foot clean room facility. Soitec is expected to start supplying the Group's global customer base with SOI wafers in mid-2008. Once fully ramped up, Soitec said, the plant projects to have the capacity to produce **1 million wafers per year**.

### ➔ THE NEEDS

- Engineering, procurement & construction of the UPW & WW treatment plants.
- Operations of the plants 24/7.

In 2006, **M+W Zander/Soitec** awarded VWS to design and build the Ultra Pure Water along with the Waste Water Treatment plants for the Soitec wafer fab in Pasir Ris, Singapore.

In 2007, Soitec has chosen VWS to **manage the complete operations** on both plants during 2 years (Total Water Management Contract\*).

*\*for more information on our Industrial Services contracts, please contact [services-sea@veoliawater.com](mailto:services-sea@veoliawater.com)*



### RESULTS

> VWS offers **cost-effective solution** by combining **2 grades of high quality water** and ensures constant high purified water production (TOC<1 ppb, Resistivity to 18.1 mega ohm, Boron<20 ppb, Silica<1 ppb, particle 0.05M<300c/l, Dissolved oxygen< 20 ppb for Grade A water).

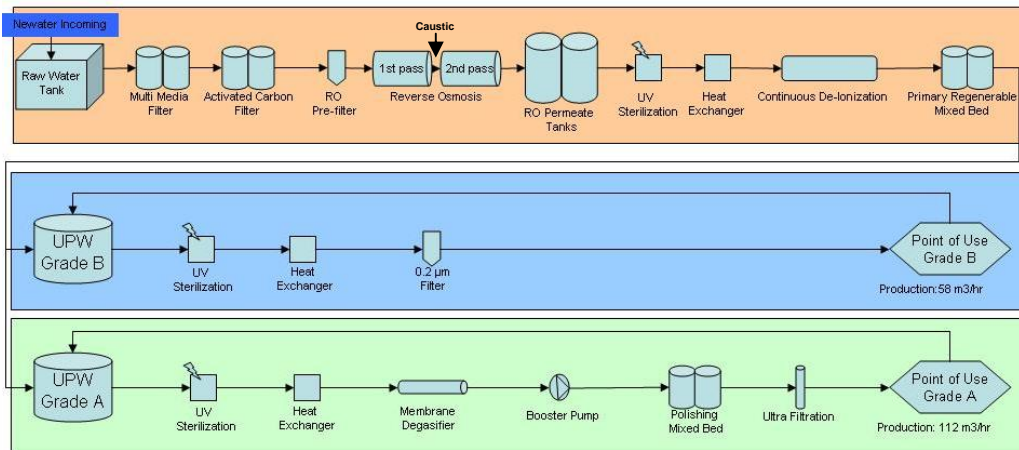
> **Chemical-free solution** by using continuous deionization technologies.

> **Total Water Management** of the plant with the support of the VWS Industrial Services Team.

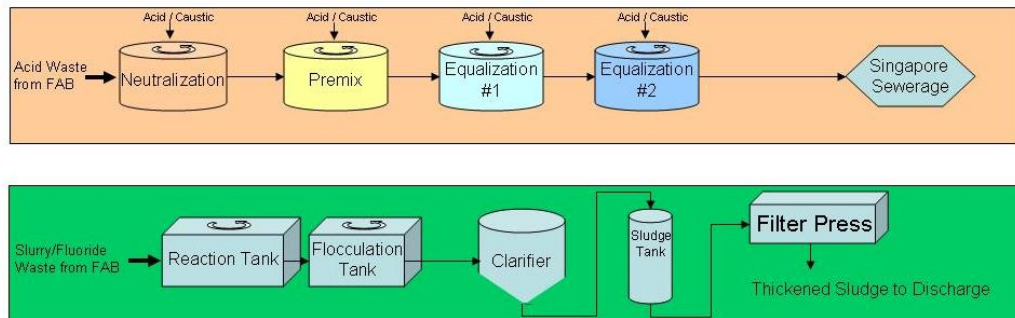
## OUR SOLUTION

- The UPW plant is designed to produce **70 m<sup>3</sup>/hr of Grade A** water, and **58 m<sup>3</sup>/hr of Grade B** water. The WWT plant is designed to neutralize **154 m<sup>3</sup>/hr** of acid waste and to treat **35 m<sup>3</sup>/hr** of slurry and fluoride waste. The WWT effluents meet local reject quality standards, and are rejected in the sewerage.
- The UPW plant uses the **continuous deionization technology (CDI-VNX)** for producing high purity water without the costs associated with the chemicals regeneration and waste neutralization. It is used to polish RO product water and remove CO<sub>2</sub>, Boron, Silica and TOC from the stream. The CDI systems use ion exchange resins and electricity to produce continuous and consistent high quality water with no regeneration downtime.
- By offering an **innovative solution**, VWS has been able to answer the most specific design requirements: small footprint, capacity to upgrade the UPW Plant when future expansion is needed....etc.

## PROCESS SCHEME



**Figure 2: Process Scheme of the Ultra Pure Water production plant**



**Figure 2: Process Scheme of the Waste Water Treatment Plant**

### CONTACT

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