



A process-water plant has to become more 'sustainable', but how? By modifying the water plant and choosing a different water source. This it is cheaper too. North Water also arranged the financing.



Sustainable process water

for Nedmag Industries



Nedmag Industries produces magnesium chloride, amongst other, that is extracted from magnesium-salt layers in the underground near Veendam. Magnesium chloride is used in various applications, varying from products to deal with icy roads to basic raw materials for special types of cement and from cheese production to beer. Its production requires process water. Initially this was extracted from lake Zuidlaardermeer, but North Water found out that it could be more sustainable and cheaper.

In order to achieve this, the existing process-water plant was acquired from Nedmag Industries. It was modified and a new intake system was built. The entire project was based on the DBFO principle, where the financing component of the new plant in particular was arranged by North Water. The result is a process-water plant, where water is extracted from the A.G. Wildervanck canal. The intake system is shared with the Kisuma industrial water plant, which result in significant cost benefits. Each year, North Water ensures the supply of maximum 4 million m³ of process water. The process water is used in particular for washing products, cooling processes and for salt extraction.

Process Description

The surface water taken from the A.G. Wildervanck canal in Veendam is upgraded in the water-purification plant to process water with a low concentration of particles: iron, manganese and carbonates. The surface water enters an intake system containing a collection grid for removing large pieces of dirt and low pressure pumps to



the building of the water-purification plant. Here the surface water is pumped by high-pressure pumps to six double-layer pressure filters. The pressure filters remove the particles: manganese and iron from the surface water. By reducing the acidity, the carbonates are converted into carbon dioxide, which is removed in a decarbonisation unit.

After the decarbonisation unit, the process water is brought to the right acidity by using a dose of sodium-hydroxide solution, and then it is stored in a buffer tank of

10,000m³. From the buffer, the process water is distributed via different transport pumps to the site of Nedmag Industries.



Process-water quality

Parameter	Unit	Value
Iron	mg / l	< 10
Manganese	mg / l	< 0,3
Suspended solids	mg / l	< 10
Acidity		9,5 ± 0,5
Carbon dioxide	mg / l	< 15
Carbonate	mg / l	< 10
Bid-carbonate	mg / l	< 10
Turbidity	FTU	< 0,1

Technische Daten

Production capacity	4 M m ³ / year
<i>Hourly capacity</i>	540 m ³ / hour
Double-layer filters	6
<i>Filter speed</i>	9 m / hour
<i>Bed height</i>	1,5 m
Decarbonisation unit	1

