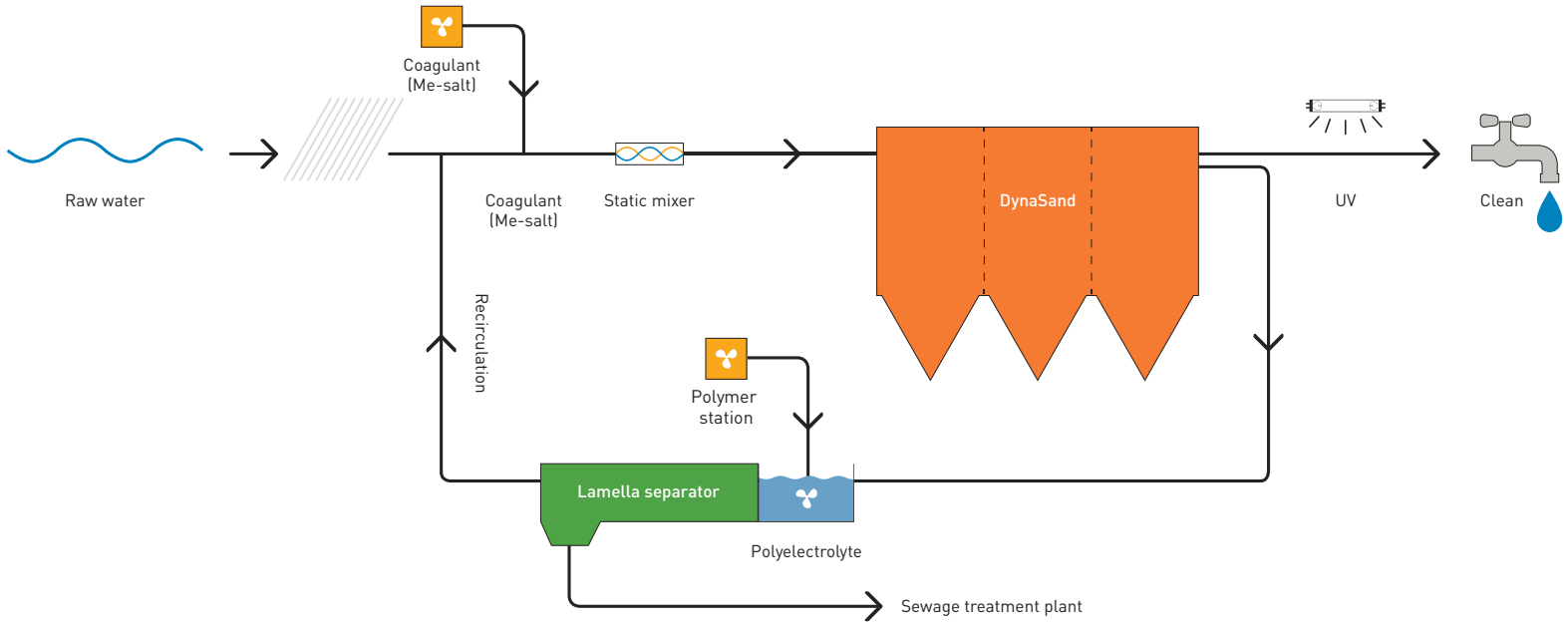
CONTACT FILTRATION

ECONOMICAL, EFFECTIVE WASH WATER TREATMENT ON LESS SPACE

With its continuous filtration process, the DynaSand filter provides the basis for what we call contact filtration. This involves chemical precipitants being added into a mixer in the pipe system just before it reaches the filters. Hydroxide flocks form and are then coagulated, filtered and separated directly inside the filter bed. This process is particularly suited to treating surface water, especially raw water with a low to moderate level of turbidity or cloudiness. There is no need for any pre-treatment, apart from possibly a screen or a micro-filter.

The treatment process used in conventional water purification plants involves several stages, such as:

1) Mixing
2) Flocculation
3) Sedimentation or flotation
4) Sand filtration



Less space required and more economical

Contact filtration produces just as good results as conventional systems but in most cases it only takes up 20% of the space. Since the entire process is continuous, it is also significantly easier and cheaper to operate. Those who are well-versed in other processes often have more confidence in the reliability of contact filtration.

With less space and fewer treatment stages and components needed, the cost of investing in contract filtration will be considerably lower than opting for a conventional water purification plant. Unlike sedimentation and flotation, contact filtration is based on building up small "micro-flocks". By switching from a conventional precipitation system to contact filtration, you can often reduce the amount of chemicals consumed by as much as 40%.

With contact filtration, no polymers are used in the main water stream – the only coagulants used are iron or aluminium metal salts. Polymers can be used more effectively during the corresponding wash water treatment process in lamella separators.

Effective wash water treatment

Wash water treatment is an effective method of taking care of all the flush water from the contact filters. The wash water treatment involves processing in a flocculation tank, followed by separation. Gravimetric thickening is carried out in a lamella separator. This set-up enables the total level of flush water loss to be kept to as low as 0.2% of the incoming flow. In this respect, contact filtration using DynaSand is considered to be as effective at providing a hygienic barrier against bacteria, viruses and parasites as UV light, chlorination and other similar methods.

Over the past 30 years, we at Nordic Water have successfully installed this system in several hundred water purification plants and industries all over the world.

Typical values for surface water treatment using our contact filtration system:

Input values:	Output values:
Turbidity: 0.5-50 FTU	approx. 0.1 FTU
Colour: 10-300 mg/l Pt	>5 mg/l Pt
CODMn: 1-40 mg/l	approx. 2 mg/l

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