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Case History

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- Water reuse for irrigation-KSA
- Cooling Towers-Iran
- Potabilization –Macedonia
- Water reuse in ceramic Company-Italy
- Industrial steel (Egypt)
- Fountain-Macedonia
- Industrial food –Chile
- DeSox filtration water-USA

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Case History

Water reuse for irrigation-KSA

Case History
Water reuse for irrigation-KSA

Background
The water coming from the waste water treatment plants (WWTP) with capacity of 20.000 citizens, after the biological and sedimentation process can be reused for irrigation. To ensure high quality standard characteristics of water it need to removal of suspended solids.

Solution
3 filters model AVC55H8 were installed after WWTP; The filtered water is stored in underground tanks and reused for irrigation;

Result
The system works 24h/24h, with an average recovery of 200 mc/h.

- Location:KSA
- Application: Process water reuse
- Flow Rate:200 m3/h (24/24 h)
- Filtration degree: 50 µm
- Water source: Municipal Waste water
- Year: 2016

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Case History
Cooling Towers-Iran

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Case History
CoolingTowers-Iran

Background

The cooling towers of one of the largest steel producers in Iran and the Middle East, which produces over 2 million tons of steel had a large problem of fouling of the recirculating water due to the dust in the air and for the growth of algae in the cooling basin.

- Location:Iran
- Application: Cooling Tower
- Flow Rate: 800m3/h (24/24 h)
- Filtration degree: 50µm
- Water source: Steel industry
- Year of revamping system: 2016

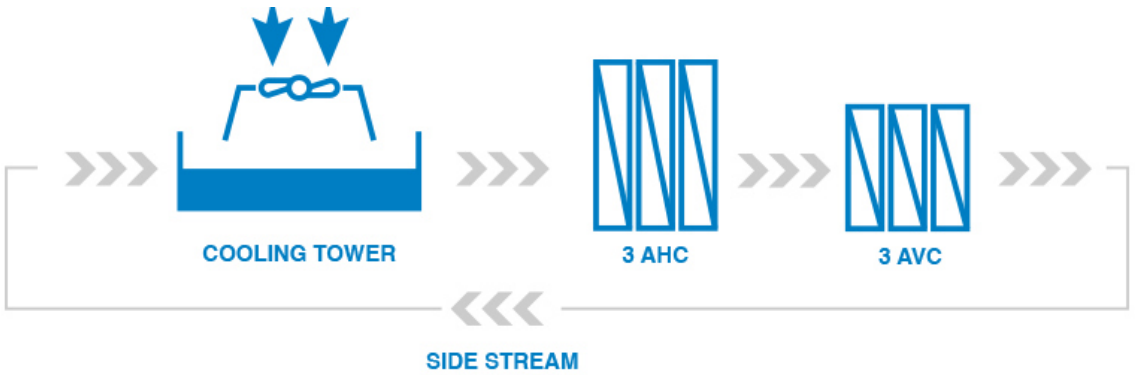
Solution

The solution has been a side stream filtration as a part of the entire flow 12,000 m³ /h recirculated in the towers. Given the large amount of fouling it was decided to operate with a filtration with 600 mc/h of flow dual-stage:

1. 1st stage with the use of filters separators, hydro-cyclones mod. AHC L6
2. 2nd stage with a 50 micron filtration security with the use of Nr.3 self-cleaning filters AVC 55 Y6

Result

With a flow rate 800m3/h, ensured a content of SST less than 5mg/l (starting from a content of the SST of about 50 mg / l).



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Case History
Potabilization –Macedonia

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Case History
Potabilization-Macedonia

Background

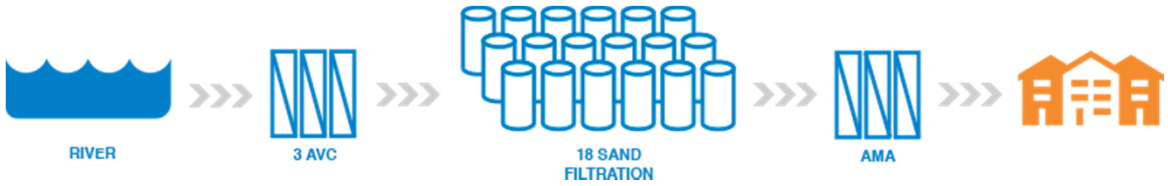
Kavadarci is a Macedonian city provided with drinking water through an intake structure build by a stream which flows near the city.
During rainy periods and at the variation of the flow rate of water in the stream, “drinking water” had poor quality especially regarding the parameter of turbidity.

Solution

Tehnoskop Doel Company in collaboration with Serenambiente srl provided a revamping of existing plant using Alfawater filters.

The Solution has following steps:

1. Pre-filtration through screen filter up to 25 microns three filters AVC 55H8
2. Dosage of coagulant
3. Coagulation, flocculation through static Mixer,
4. 1st stage filtering through a layer of sand & anthracite at speed of 18m/s,
5. 2nd stage filtering through microfilter self cleaning filters AMA 5micron
6. Disinfection with chlorine
7. Control and automation



- Location: Macedonia
- Application: Drinking water
- Flow Rate: 360m3/h
- Filtration degree: 5µm
- Water source: River water
- Year of commission:2016

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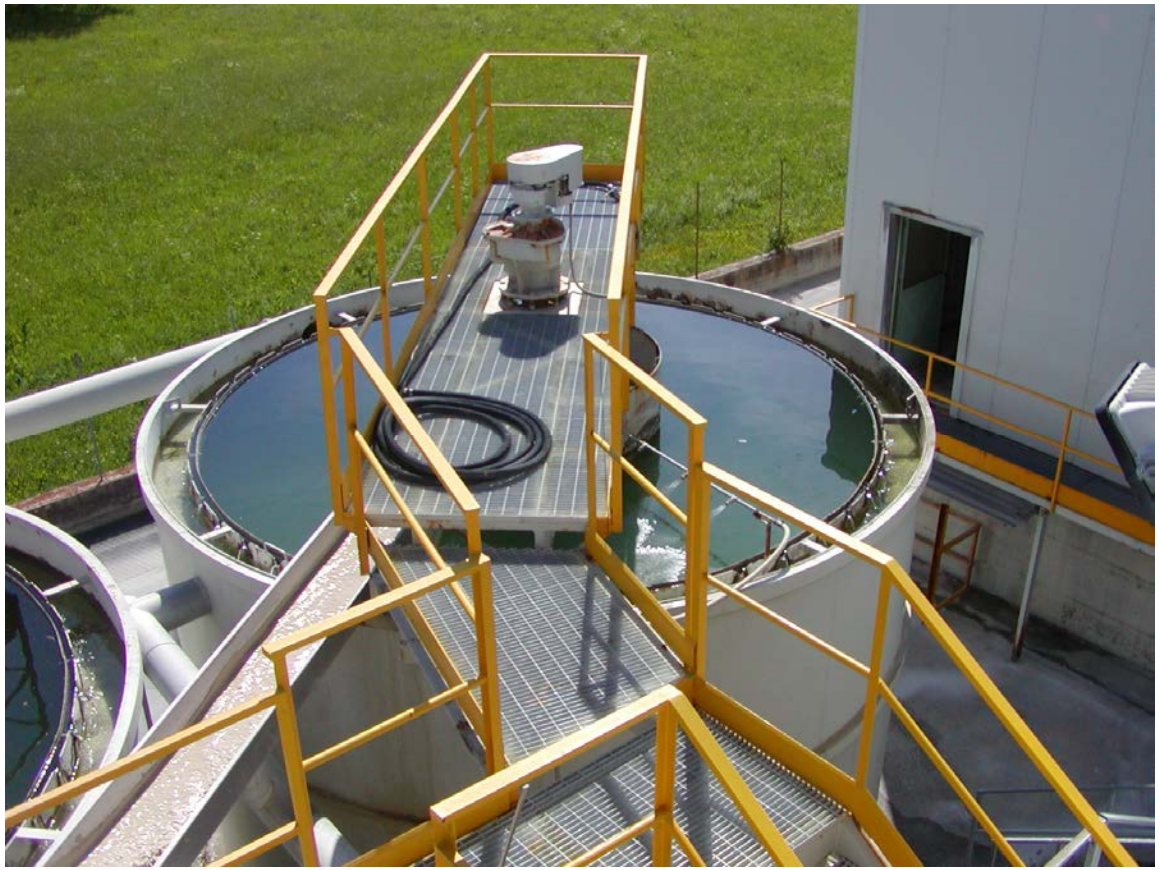
Case History

Water reuse in ceramic Company-Italy



Case History

Water reuse in ceramic Company-Italy

Background

Ceramica Dolomite, the most important Italian company manufacturing ceramic for the healthcare industry, wanted to recover the waste water of ceramic working process, to reduce the consumption of drinking water used in production. In collaboration with serenambiente srl Company , Alfawater provided a preassembled battery of filtration.

Solution

Alfawater filters were installed after the treatment of clariflocculation and sedimentation .The effluent water from the sedimentation tank is filtered by a AMA filters with 5 micron filtration degree.
The filtered water is stored in underground tanks and reused for:

a) Cooling system
b) Molds washing

Result

The system works 24h/24h, with an average recovery of water equal to 150,000 m3/year.

- Location: Italy
- Application: Process water reuse
- Flow Rate: 40 m3/h (24/24 h)
- Filtration degree: 5 µm
- Water source: Ceramic Industry
- Year of revamping system: 2016

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Case History
Industrial steel (Egypt)

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Case History
Industrial steel -Egypt

Background

- One of the largest steel producers in Egypt and the Middle East, which produces over 2 million tons of steel products per year,
- A considerable flow of water which was discharged after use.

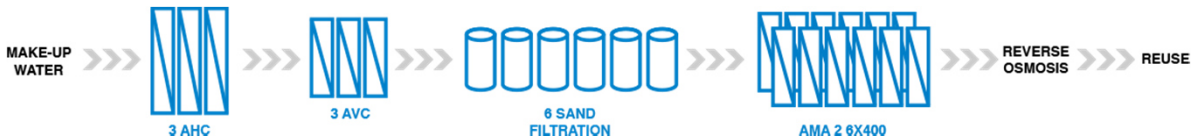
Target: To recover the maximum quantity of water normally discharged by the production process.

Solution

To arrive to a recovery of the waste water >70% and a quality similar to raw water, the filtration with 3 stages: AHC filters, AVC filters, Sand filters, AMA microfilters and finally RO plant.
The wastewater of the various devices from the plant are collected in an equalization tank and subsequently pressurized to feed a battery composed of 3 filters AHC (model AHC L 6). The water filtered from the coarse parts of suspended solids is then filtered by a battery composed by 3 AVC filters (Model AVC L6) with filtration degree of 50 microns. The water is then filtered by 6 sand filters of the diameter of 3000 mm. The final microfiltration is carried out by a battery of microfilters AMA (model AMA2 6x400), with filtration degree of 5 microns.

Result

Recovered 70% water discharged and ensured a content of SST less than 5 mg/l(starting from a content of the SST of about 50 mg/l) ;



- Location: Egypt
- Application: Process water reuse
- Flow Rate: 240 m3/h (24/24 h)
- Filtration degree: 5 µm
- Water source:Steel industry
- Year of revamping system: 2016

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Case History
Fountain-Macedonia

Case History
Fountain -Macedonia

Background
The city of Skopje has built two fountains inside the river that runs through the city. The water is launched from nozzles installed directly on the river bed. The water must be filtered due to the presence of coarse bodies and especially from silt transported in large quantities from the river.

Solution
There were realized two pumping and filtration stations near the watercourse of the river. Each line of filtration consists of pcs. 4 filters AVC 55H8 for a total flow rate of 600 m³/h with a filtration degree of 100 microns.

- Location: Macedonia
- Application: Fountains
- Flow Rate: 600 m3/h
- Filtration degree:100 µm
- Water source: River water
- Year of commission:2016

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Case History
Industrial food –Chile

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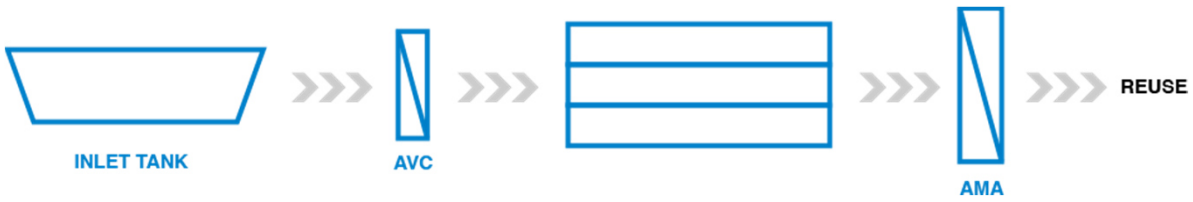
Case History
Industrial food -Chile

Background
In a food production of apples, there are water channels for washing and transporting the apples before packaging and warehousing. The water is recirculated with dirt, leaves and other impurities deriving from the process of collecting apples. The water channel must comply with quality standards and must be kept sterile. Using side stream filtration more water can be recirculated with environmental and economic issues.

Solution
The filtration station is composed with pre-filtration stage with AVC filter with 100 micron filtration degree and a 2nd stage with AMA filters, 20 micron filtration degree.



- Location: Chile
- Application: Process water reuse
- Flow Rate:100 m3/h
- Filtration degree:20 µm
- Water source: Food industry
- Year of commission:2016

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Case History
DeSox filtration water-USA

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Case History
DeSox filtration water-USA

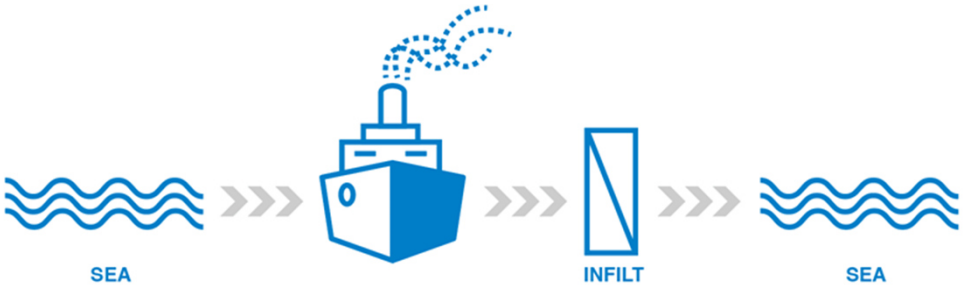
Background

The wash sea water discharged from a DeSOx Tower in the ships must to be filtered to ensure high quality standard characteristics of water before to discharge in the sea. The foot print required to install the filter in the existing pipeline was very low.
The characteristic of water are :

- pH = 3
- TDS = 36.000 ppm
- HYDROCARBONS C>10 = 500 ppb
- TURBIDITY = 20 NTU (FMU)
- TSS = 250 ppm
- METALS = ALL at xx ppb

Solution

Alfawater installed #31 INFILT 800 self cleaning filter with in-line bybass (Alfawater patent), to treat 800 mc/h of sea water discharged from DeSox tower installed in the ships. The filtration degree was 50 micron with oil repellent tissue.



- Location:Carnival Ships
- Application:DeSox tower
- Flow Rate:800 m3/h
- Filtration degree: 50 µm
- Water source:sea water
- Year: 2016