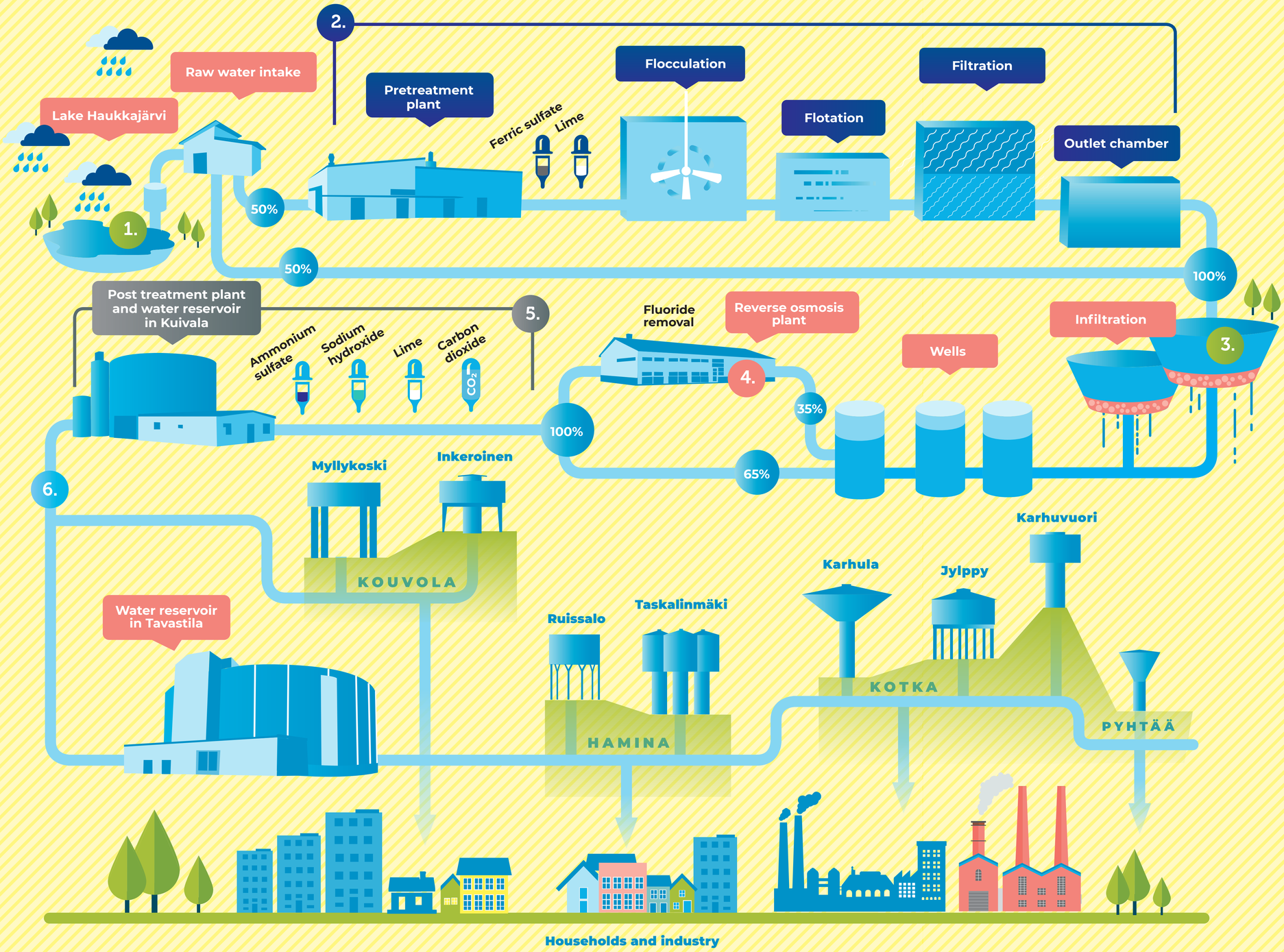
WATER TREATMENT PROCESS



1. RAW WATER INTAKE
The raw water used for artificial groundwater production is pumped in from the lake Haukkajärvi.

2. PRETREATMENT
Raw water taken from Lake Haukkajärvi goes through the pre-treatment process before its infiltration into the ground. Pretreatment diminishes the organic substances in the water, which reduces the organic load in the esker and raises the oxygen content in the groundwater. The treatment of raw water comprises of chemical precipitation and rapid filtration.

3. INFILTRATION
The Kuivala plant uses water from Lake Haukkajärvi, which is infiltrated into the large esker until it ends up to the ground water layer. The sand soil in the esker reduces or removes impurities from raw water.
The natural method produces clean water similar to natural groundwater. The raw water is infiltrated to the ground trough the infiltration ponds.

4. FLUORIDE REMOVAL
The groundwater in southeast-Finland contains a significant amount of fluoride, more than in other areas of Finland. Since the fluoride concentration exceeds the quality requirements set for drinking water, part of the water is treated with membrane filtration. The quality requirements for the fluoride in drinking water is 1,5mg/l.

5. POST TREATMENT
The post treatment process comprises of alkalisation and disinfection. The alkalisation prevents corrosion in the drinking water network. Through disinfection it is ensured that the microbiological quality of the water is high.

6. WATER TRANSMISSION
Water is delivered from Kuivala to the customers in south-Kouvola, Kotka, Pyhtää and Hamina. There are two trunk mains between Kuivala and Kotka so that the water transmission can continue uninterrupted in any eventuality.