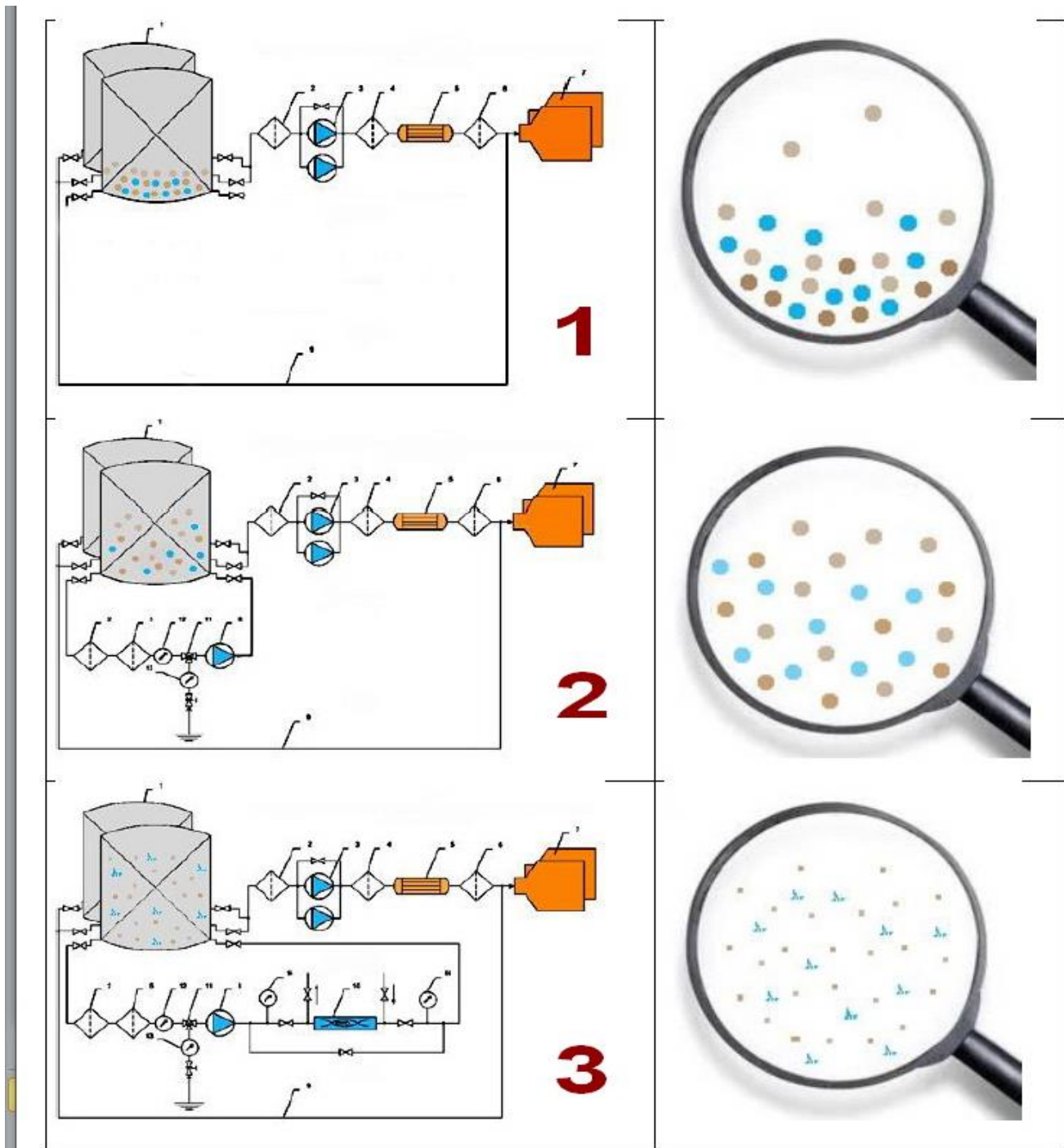


**HFO ( crude oil ) storage tank** - options for the distribution of sludge (water, asphalt, resins) depending on the availability and type of recycling system.

**1. Without its own recycling** - all sludge at the bottom in the sediment and large pieces + condensate water. Continuous accumulation of sludge and product loss.

**2. Recirculation by standard pump** - all sludge in the lower half of the reservoir with the same size of mechanical impurities. Condensate water at the bottom and inside the fuel, in a dropsies form. Filtration losses are the same.

**3. Recycling by a homogenizer** - all mechanical impurities are crushed up to 4-30 microns, the homogeneity of the fuel throughout the all volume, the sludge and condensate water is almost no. Losses for storage and filtering are sharply smaller.



**1. Using petroleum storage of tanks without its own recycling line**, always leads to the consolidation of water lenses, deposition of water into the lower horizon to form the bottom layer of condensate water. Resins, asphalt and mechanical impurities, already available in petroleum products, are also settled down and form solid layers, which are fitted and converted into a solid monolithic precipitate. With long-term storage, a part of the light fractions is disappeared, and the part is polymerized. The fractional composition deteriorates, clots arise, the viscosity of the stored product and the frosted temperature increases, the burning rate is reduced. HFO#6 after 5-8 years of storage, turns into marmalade.

Removing the sediment and oily water, filtering the resins and clots - all this requires time, costs and leads to the loss of petroleum products by 2-3%.

**2. Recycling of the reservoir, using gear pumps**, prevents the fallout of the resins and asphaltenes into the bottom solid precipitate, and inhibits the formation of clots and the accumulation of condensate water. However, the resins and asphalt are not crushed - not burnt residues of this fuel remain on heat exchangers and reduce the efficiency of boilers. Water remains in a droplets form, which requires additional energy to evaporation, slows down the process of burning, lengthens the torch that he places the rear wall of the boiler. The result is more homogeneous fuel, without any improvement. **Filtration losses are the same.**

**3. Recirculation with a homogenizer** leads to comminution of solids (resins, asphaltenes), and clots, which directly reduces the losses on filtration and reduces unburned residue on the heat exchangers (increases boiler efficiency, the interval between cleanings, nozzles and pumps resource). This leads to a decrease in the volume of the formation of the bottom sediment 10 times. The use of a homogenizer grinds and emulsifies water, which increases the combustion efficiency by 3-6% and stops the accumulation of condensate water in the bottom layer of the tank. It can be said that there is a minimization of the sediment and minimizing losses in the reservoir. This is equally for boiler and ship HFO, viscous oil or other viscous hydrocarbons, inclined to sedimentation, plugging, polymerization, absorption of moisture or loss of light fractions.

**We produce reliable fuel homogenizers** which work for 3-9 years on the most viscous fuel oils, with an abnormal amount of sulfur and mechanical impurities. And we have 177 successful projects in 2007-2021.

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